

M^edical

TIMES

THE JOURNAL OF GENERAL PRACTICE

Diseases of the Heart—Long Term Management

Use of a Pituitary Hormone in Major Surgery

Iron Metabolism and Iron Deficiency Anemia

Pyogenic Infections of the Skin

Are We Finding Them?

Treatment of Obesity

Impotence

Kidney Function (Refresher)

Orthopedics and the Law

Genetics and the Red Cells

Bellevue Postgraduate Clinico-Pathological
Conferences

Stenosing Tenosynovitis (Office Surgery)

Contemporary Progress

Editorials

Twenty Stocks for Long-Term Investment (Investing)

Contents Pages 5a, 7a, 9a



NO. 3

MARCH 1956

VOL. 84

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remain clear-headed—
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References: 1. Peacock, D. G.:
Personal communication.
2. Harding, C. W.: Personal
communication. 3. Hollander,
W. M.: Personal communi-
cation.

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BPA

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Personalize Arthritis Therapy with Steroids plus **BUFFERIN®**

Exploit fully the use of salicylates in arthritis—give steroids in minimal doses—combine salicylates with corticosteroids for additive antiarthritic effect—this is the program Spies' advocates in a recent article in the *Journal of the American Medical Association*.

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BUFFERIN contains no sodium, a marked advantage when cardiorenal complications make a salt-restricted diet necessary.

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REFERENCES:

1. J.A.M.A. 159:645 (Oct. 15) 1955.
2. J.A.M.A. 158:386 (June 4) 1955.



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rapid
visceral autonic, Dactil®

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TRIDAL permits more comprehensive control of gastrointestinal complaints by providing the combined benefits of two piperidols. The local action of Dactil® works immediately to give **rapid** relief of gastrointestinal pain and spasm; the potent cholinolytic Piptal† reinforces relief and provides **prolonged** normalization of secretion and motility.

TRIDAL is singularly free from urinary retention, constipation, dry mouth, blurred vision.

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by clinical experience in
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ORAL SOLUTION (85% aqueous)

Coramine is a proved respiratory and central nervous system stimulant, useful in controlling Cheyne-Stokes respiration and paroxysmal dyspnea associated with cardiac decompensation.

The choice of oral or intravenous therapy depends upon the seriousness of the situation. When a prompt response is necessary, the intravenous route is preferred. Oral administration produces a slow, progressive improvement—usually one to three days elapse before the optimum benefit is realized.

Since Coramine is rapidly and completely absorbed from the gastrointestinal tract, the Oral Solution (3 to 5 ml., three to five times a day) may be administered in cases of chronic cardiac decompensation or in convalescence following acute coronary occlusion.

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Oral Solution:
bottles of 1 and 3
fluidounces and
bottles of 1 pint.
Also available for
intravenous or
intramuscular use:
Ampuls, 1.5 ml.
and 5 ml.;
Multiple-dose Vials,
20 ml.

C I B A

SUMMIT, N. J.

2A2200M



Off the Record . . .

True Stories From Our Readers

Each incident described has been contributed by one of our readers. Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported German apothecary jar will be sent in appreciation for each accepted contribution.

Ammoniated, No Doubt

This is another letter that I received from one of my patients.

Dear Doctor:

I have been informed that my mother is at the hospital there with a broken hip. I have been told by Doctors that when old people have a broken bone they sometimes do not get well, that the fracture does not heal.

I have received a great deal of testimony, marvelous information about new methods of caring for people, and I might be able to do something about such things or when old people have a fracture.

Please let me know immediately about her injury and if you can do anything for her and if the Doctor's can't do anything for her I might be able to do something for her. You can see that my testimony or testimony that God reveals to me really does. When I came in 1937 I was in New York and I had sinus trouble very bad, I got a sore nose in winter time

and I suppose you know this nasal spray medicine which costs \$1.75 and \$3.00 for the prescription or \$4.75.

Well several years later I was told or God revealed to me that I could use toothpaste to cure this soreness and the toothpaste really was wonderful. It cures the soreness in a few minutes and is quicker than the \$4.75 medicine.

Yours truly,

A Patient

W. B. K., M.D.

Keokuk, Iowa

Doctor's Orders

I was giving a six year old boy a routine physical, and to obtain a urine specimen, gave him a bottle, sent him in the room, and told him to "fill it with your water."

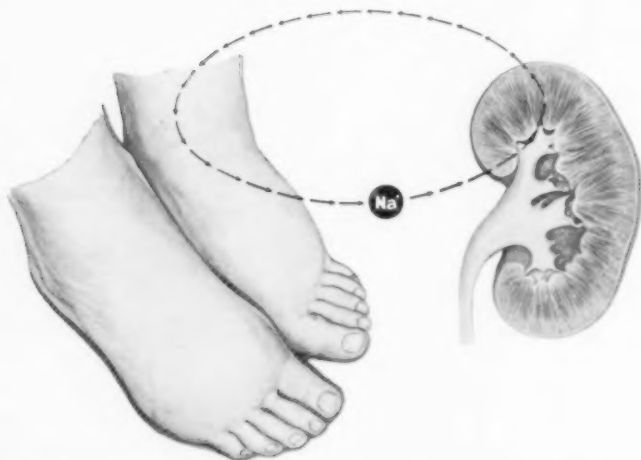
He in turn filled the bottle with spigot water, thinking that was what I wanted.

A. L. S., M.D.

Norfolk 5, Va.

—Concluded on page 21a

New Orally Effective Diuretic



WITHOUT MICTINE—Prior to diuretic therapy excessive sodium and water are characteristically retained in the edematous patient.



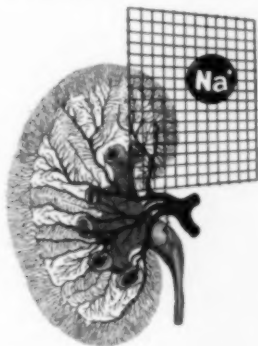
WITH MICTINE—Inhibition of the reabsorption of sodium ion leads to an increased excretion of sodium ion, water and chloride.

MICTINE® — ORAL NON-MERCURIAL DIURETIC

for Congestive Edema

*Best results are obtained when Mictine is administered
with meals on an interrupted dosage schedule.*

An effective diuretic has been described as one which causes excretion of water, sodium and chloride in amounts sufficient to reduce the edema but not to result in the syndrome of salt depletion.



Mictine (brand of aminometradine), end result of many years of Searle Research, introduces to clinical practice an *improved* diuretic which not only meets the standard qualifications but has these seven additional advantages:

Mictine is orally effective; it is not a mercurial; it has no known contraindications; it does not upset the acid-base balance; it exerts no significant influence on electrolyte balance; it may be given in the presence

of renal or hepatic diseases; it is well tolerated.

As with most effective therapeutic agents, in high dosage Mictine may cause some side effects in some patients; however, on three tablets daily, taken with meals on an interrupted dosage schedule, these side effects (anorexia and nausea, rarely vomiting, diarrhea or headache) are minimal or absent.

Clinically, Mictine is useful in the maintenance of an edema-free state in all patients and for initial and continuing diuresis in mild or moderate congestive failure. It is not intended for initial diuresis in severe congestive failure unless either sensitivity or tolerance to other diuretics has developed in the patient.

The maintenance dosage of Mictine, as well as for initial diuresis in mild or moderate congestive heart failure, is one to four 200-mg. tablets daily in divided doses; the dosage for initial diuresis in severe congestive failure, under the conditions already described, is four to six tablets daily. For either use, it is recommended that Mictine be prescribed with meals on interrupted dosage schedules; that is, prescribing Mictine on alternate days or for three consecutive days and omitting it for the next four days.

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a new substance

flexin*

the first orally effective lissive†

dosage: Adults—1 to 2 tablets three or four times a day with food or immediately after meals. Children—1 tablet two to four times a day.

supplied: Yellow, scored tablets in bottles of 50.

†lissive: Spasmolytic with no known interference with normal function.

*T.M.

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**true spasmolysis
of skeletal muscle
in musculoskeletal and
neurological disorders
effective up to 6 hours**

Synthesized and characterized by McNeil Laboratories, FLEXIN is the first skeletal muscle relaxant *truly effective by mouth*. Its lissive action relieves the disability and pain of skeletal muscle spasm—common denominator of many musculoskeletal and neurological disorders.

not a mephenesin derivative

FLEXIN provides superior and long lasting—up to 6 hours—spasmolysis of voluntary muscle in low back syndromes, fibrositis, strains, sprains, and in noninflammatory rheumatic and arthritic disorders.

Striking results are reported in cerebral palsy. Over 65 per cent of spastics obtained definite reduction of excessive muscle tone. In addition, a highly significant number of patients with multiple sclerosis, spinal spasticity and Parkinsonism were benefited.

McNeil Laboratories, Inc., Philadelphia 32, Pa.

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when a life is in balance

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(nikethamide CIBA)

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Your telephone could ring at this very moment, calling you to a respiratory emergency. At such times, the handy ampuls of Coramine in your bag may tilt the balance of life. "Coramine . . . is a quick acting analeptic, vasopressor and respiratory stimulant. . . . It . . . helps to restore normal vascular tone, increase cardiac efficiency, deepen respiration and combat anoxemia."¹

Supplied: Each form of issue is a 25% aqueous solution of nikethamide. *Ampuls*, 1.5 ml.; cartons of 5, 20 and 100. *Ampuls*, 5 ml.; cartons of 3, 12 and 100. *Multiple-dose Vials*, 20 ml.; cartons of 1. Also available: Coramine Oral Solution.

¹Watts, J. C., and Ruthberg, J.: *Ann. Int. Med.* 29: 1104 (Dec.) 1948.

C I B A

SUMMIT, N. J.

2/2100N



"Anchors Aweigh"

During a recent proctoscopic examination, a patient very seriously asked me, "Doctor, how long is that periscope?"

J.W.E., M.D.
Baltimore 15, Md.

Mistaken Identity

While interning in Hahnemann Hospital, Philadelphia, Pennsylvania, I had the following experience on accident service.

An elderly lady came in with an injured leg and had it all wrapped up and difficult to get at. I asked her to go back to the ladies room and remove the dressings as all my dressing rooms were filled.

She soon returned all smiles and gave me this reply. "My this is a nice hospital. They have little individual stalls for women to wash their feet and they even have soap at the bottom, too."

Little did she realize she had mistaken the men's rest room for the women's and I never told her.

E.L.D., M.D.
South Gate, Calif.

Upset Mother!

While I was working at a clinic at one of the large city hospitals recently, a proud mother brought in her daughter. Examination quickly revealed the presence of a five months pregnancy. Questioning the daughter got me no where. I then asked the mother, "Who

is the father of your daughter's child?" I have never met with such a rebuff in all my life. She immediately became incensed, even to the point of acute agitation, and told me in no uncertain terms that I was to understand definitely that her daughter was only eleven years of age and certainly not old enough to be married. Apparently, the pregnancy bothered her not at all.

J. W. E., M.D.
Baltimore 15, Md.

Layman's Interpretation

When I was in the Navy as a physician, I was introduced to a young lady at a dance as Dr. "S."

She asked—"What kind of doctor are you?"

My reply, "I am a Naval Surgeon."

She, thinking I meant "navel" said, "My, how you doctors specialize now!"

A. L. S., M.D.
Norfolk 5, Va.

Worried Patient

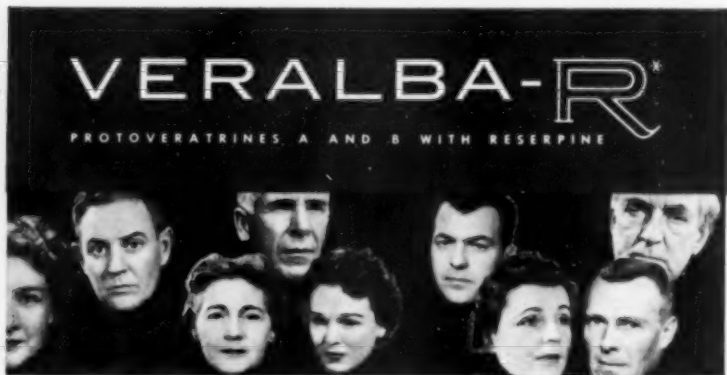
One day, a ward patient called me to her bedside. "Is it true," she queried, "that tomorrow they're going to take out my ureter?"

"They'll take out your uterus," I corrected gently.

"I don't care what they take out," she smiled slyly, but shyly, "as long as they leave the good feeling."

I.R.B., M.D.
Brooklyn, N. Y.

Conservative therapy in hypertension can be made more effective



IN MANY OF YOUR HYPERTENSIVE PATIENTS, conservative treatment with reserpine can be made more effective by placing the patient on safe combination therapy.

EFFECTIVE. When combined with reserpine, the blood pressure lowering effects of protoveratrines A and B can be achieved with smaller dosage, and with marked decrease in annoying side actions.

SAFE. Veralba/R is many physicians' choice of combination therapy. It can be used routinely without causing postural hypotension or impairing the blood supply to the heart, brain and other vital organs. Dosage is simple.

ACCURATE. Veralba/R potency is precisely defined by chemical assay. All active ingredients are in purified, crystalline form.

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the formula tells you why PRONEMIA is the MOST POTENT of all oral hematinics

Look at the formula and see for yourself why PRONEMIA has no equal. One capsule daily supplies a generous quantity of every known hemopoietic agent, including purified intrinsic factor concentrate. PRONEMIA is indicated for the treatment of ALL treatable anemias.

EACH CAPSULE CONTAINS:

Vitamin B ₁₂ with Intrinsic Factor Concentrate.....	1 U.S.P. Oral Unit
Vitamin B ₁₂ (additional).....	15 mcgm.
Powdered Stomach.....	200 mg.
Ferrous Sulfate Exsiccated.....	400 mg.
Ascorbic Acid (C).....	150 mg.
Folic Acid.....	4 mg.



filled sealed capsules (a Lederle exclusive!) for more rapid and complete absorption.

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In a new flavorful elixir... **Serpедon** (Belladonna with Reserpine) the tranquilizing antispasmodic for rapid relief of abdominal spasm

SERPEDON* swiftly relieves gastrointestinal spasm and provides *tranquilization*, without the use of a habit forming drug.

SERPEDON combines:

1. three alkaloids of belladonna, equivalent to 7 minims of the tincture, for high efficacy in relaxing gastrointestinal muscle spasm; and
2. reserpine to calm the patient and obviate anxiety symptoms.

There is no dulling of the senses, and the patient may actively pursue his daily routine.

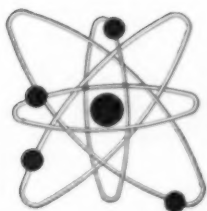
Supplied: SERPEDON Elixir in bottles containing one pint. SERPEDON Tablets in bottles of 100 and 1,000 scored tablets.

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Walker

LABORATORIES, INC., MOUNT VERNON, N.Y., U.S.A.





Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology,
New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS *YOUR* DIAGNOSIS?

- | | |
|-----------------------------------|-----------------|
| 1. Gas bacilli infection | 3. Normal |
| 2. Non-opaque gall bladder stones | 4. Gas in colon |

(ANSWER ON PAGE 113a)





THEY HAVE TO BE

SHARP

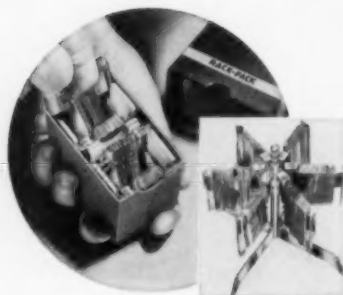
...TO GET TO SURGERY

BARD-PARKER RIB-BACK



DETACHABLE SURGICAL BLADES

must 'survive' a rigid series of progressive scientific tests to qualify as suitable for surgical use. Those that 'pass' are surgically perfect and uniformly sharp throughout their entire cutting edge. They will remain sharp and useful for longer periods . . . an important factor in economy when yearly volume of purchases is considered.



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need a lift
a new Rx...

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*new, mild stimulant
and antihistamine*

boost their spirits... relieve their allergic symptoms

So often the allergic patient is tired, irritable, depressed—mentally and physically debilitated. Frequently, antihistaminic agents themselves are sedative, adding to this already fatigued and disconsolate state.

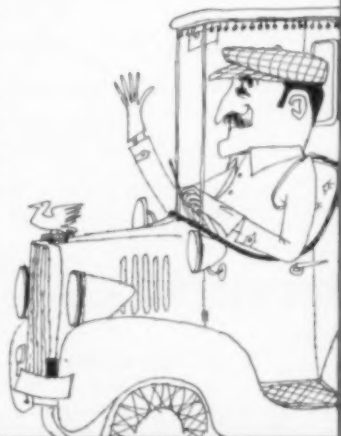
Plimasin, because it combines a proved antihistamine with a new, mild psychomotor stimulant, overcomes depression and fatigue while it achieves *potent* antiallergic effects. Its new stimulant component—Ritalin—is totally different from amphetamine: smoother, gentler in action, devoid of pressor effect.

DOSAGE: *One or 2 tablets as required.*

Each Plimasin tablet contains 25 mg. Pyribenzamine® hydrochloride (tripelennamine hydrochloride CIBA) and 5.0 mg. Ritalin® (methyl-phenylacetate CIBA).

C I B A SUMMIT, N. J.

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Ferrous Iron with Vitamin C

*for simple
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rapid
economical*

correction of iron deficiency anemias

"Optimal absorption of iron is best assured by administering it in the ferrous form with ascorbic acid . . ."*

"CYTOFERIN" —*the logical combination for iron therapy.*

- Iron in the readily absorbed ferrous form.
- Vitamin C to maintain acidity in the upper intestinal tract for greater iron absorption.
- Vitamin C as a reducing agent for the ferric iron obtained from food.
- Vitamin C for hypochromic microcytic anemias, which will not respond to oral iron therapy alone.

"CYTOFERIN" —*the direct approach to greater iron absorption.*

Each tablet contains:

Ferrous sulfate exsic. (3 gr.) 200 mg.

Vitamin C (ascorbic acid) 150 mg.

Dosage: 1 tablet two or three times daily, taken preferably with meals.

Supplied: No. 705, bottles of 100 and 1,000.

*Sacks, M. S.: Ann. Int. Med. 42: 458 (Feb.) 1955.



Ayerst Laboratories • New York, N. Y. • Montreal, Canada





Coroner's Corner

PRISON DEATH

Any pathologist who has wide autopsy experience is well acquainted with the fact that chronic disease processes ordinarily progress slowly. There may be little visible difference in the organs affected at a period long prior to death and at the moment when they play their role as a cause of death. A degree of coronary arteriosclerosis may be responsible for the sudden exitus of one patient while in another it is encountered fortuitously when the individual has died as a result of trauma, or poison, or from some other natural cause such as a cerebral hemorrhage. A complete autopsy is essential to exclude other conditions necessarily more immediate before ascribing death to the chronic disease in question.

The following case will illustrate this point. A middle aged man who had been confined to jail was found dead in his cell. There were no unusual external signs. The autopsy disclosed a rather severe grade of coronary arteriosclerosis and myocardial fibrosis sufficient to cause death under some circumstances. Dissection of the throat organs revealed a rolled up and crumpled necktie, apparently swallowed with suicidal intent, which was impacted in the pharynx so

as to close the air passages. This obstruction was not visible through the mouth which was tightly closed by rigor mortis.

The determination of death is basically an interpretative process which includes in addition to consideration of the circumstances (1) recognition of the pathologic changes found anatomically, bacteriologically, and chemically, and (2) selection of the lesion or lesions which were fatal to the victim.



(From Gonzalez, T. A.; Vance, M.; Helpert, M.; and Umberger, C. P.: "Legal Medicine, Pathology, and Toxicology," Appleton-Century-Crofts, Inc.)

*when hormones
are preferred therapy...*

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assure superior quality

Schering's high standards and quality control assure products of
unchanging potency and purity for uniform action and clinical efficacy.

minimal cost

Manufacturing know-how and continuing research by Schering
provide preparations of highest quality at minimum cost.



prevent periodic absenteeism...

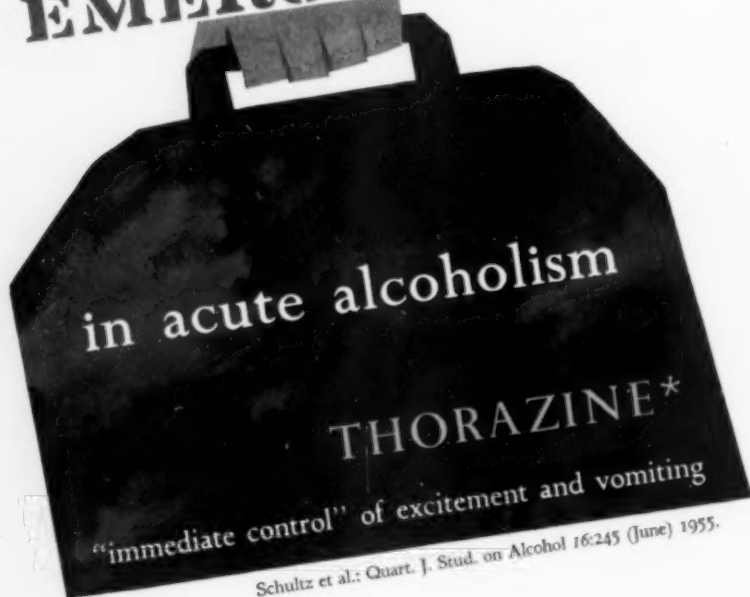
A major cause of absenteeism, dysmenorrhea represents a serious economic handicap to the more than one in three menstruating women with this complaint. PRANONE produces "brilliant results," and more physiologic relief of dysmenorrhea,* significantly reducing absenteeism from this cause.

PRANONE® Tablets (brand of Ethisterone U.S.P.) are available in 5, 10 and 25 mg. strengths.

*Parsons, L., and Tenny, B. Jr. *M. Clin. North America* 34:1537, 1950.



EMERGENCY!



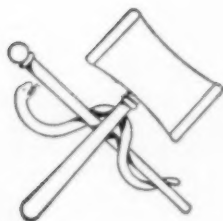
'Thorazine' is available in ampuls, tablets and syrup, as the hydrochloride; and in suppositories, as the base.

'Thorazine' should be administered discriminately; and, before prescribing, the physician should be fully conversant with the available literature.

for emergencies—always carry 'Thorazine' Ampuls in your bag

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.



What's Your Verdict!

Edited by Ann Picinich, Member of the Bar of New Jersey

The right of a Board of Registration in Medicine to discipline a physician is brought before the Court for its judgment.

A charge has been filed with the board by the Medical Society claiming that the physician engaged in a conspiracy with an attorney to solicit patients to employ the attorney to prosecute their claims for personal injuries. He conspired further to share equally with the attorney the combined medical and legal fees, payments for which were always to be made to him in cash. One hundred and thirty-eight instances of such fee-splitting are enumerated. If true, the doctor received in cash as "kick-backs" a sum in excess of what he received by check in the same period for medical fees. This the board maintains is gross misconduct by the physician in the practice of his profession.

A state law provides that the board may suspend, cancel or revoke any license issued by it if the holder thereof "is guilty of deceit, malpractice or gross misconduct in the practice of his profession."

Counsel for the physician takes the position that the charge, even if established by the evidence, does not constitute gross misconduct in the practice of a medical profession, such gross misconduct refers to misconduct in the diagnosis and treatment of a patient. Whereas, the law forbidding persons to act as "runners" for attorneys is not one relating to the practice of medicine, but rather to the practice of law.

The board contends otherwise. The conduct of the physician was in violation of the trust and confidence placed in him. Few of his patients would be pleased to know he received in addition to his medical bill further sums for which he rendered no services to the patient. The conspiracy, further, lessened the proper interest of the doctor in promptly curing his patients, and was an inducement to the fomenting of litigation.

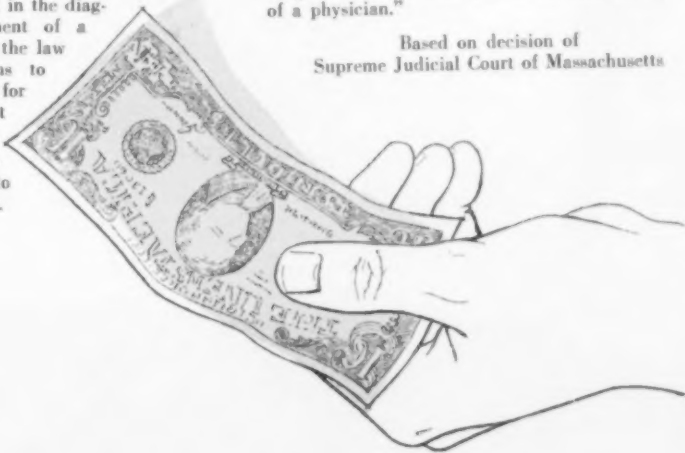
In your opinion, could the physician's conduct be considered gross misconduct in the practice of his profession?

* * *

The Supreme Judicial Court of Massachusetts held that the board has jurisdiction to proceed against the doctor for gross misconduct in the practice of his profession.

"Members of all learned professions, including physicians, owe a high moral duty to serve the public before they serve themselves. The courts fully recognize the strongly professional and confidential nature of the practice of medicine, as well as the necessity for the observance of high moral standards in connection therewith, and fee-splitting is in plain conflict with the moral obligations of a physician."

Based on decision of
Supreme Judicial Court of Massachusetts



Handwritten notes in the top left corner of the page, appearing to be a signature or initials.

keep cold victims alert
and on the job

with a new fortified **CORICIDIN^{*}**
forte
CAPSULES

To clinically proved CORICIDIN are added two extra cold control factors plus antihistamine in full therapeutic dosage for thoroughgoing symptomatic relief no matter how severe the cold:

Vitamin C — for stress and anti-infection support

Methamphetamine — to counteract fatigue and "cold doldrums"

each CORICIDIN[®] *forte* Capsule provides:

Chlorphenpyridamine maleate	4 mg.
Salicylamide	190 mg.
Phenacetin	130 mg.
Caffeine	30 mg.
Ascorbic acid	50 mg.
Methamphetamine hydrochloride	1.25 mg.

Packaging: Bottles of 100 and 1000 capsules.

^{*}a name synonymous with cold control

Schering

full relief
for every part
of the severe cold

CORICIDIN,[®] brand of analgesic-antipyretic.





for the cougher...

the calm after the storm

Coricidin is a brand name for a synthetic analgesic compound. © 1977 J. B. Schering



good for all "sounds" of cough

The comprehensive formulation of CORICIDIN Syrup effectively eases cough and helps the patient to feel better, rest easier, recover more quickly.

In any stage of a cold CORICIDIN Syrup not only controls cough, but by anti-allergic action it relieves congestive symptoms, and its classical analgesic formulation comforts the patient. Because of its pleasing taste, this versatile cough syrup is suitable for young and old alike.

CORICIDIN^{*} syrup

** a name synonymous with cold control*

Each teaspoonful (5 cc.) of CORICIDIN Syrup[†] contains:

Dihydrocodeinone bitartrate	1.67 mg.
Chlorpheniramine maleate	2 mg.
Sodium salicylate	225 mg.
Sodium citrate	120 mg.
Caffeine	30 mg.
Glyceryl gualacolate	20 mg.

If additional ingredients are desirable for special conditions, CORICIDIN Syrup is compatible with therapeutic amounts of other medicaments, such as codeine salts, belladonna tincture and ephedrine sulfate.

dosage

Adults—One teaspoonful every three or four hours, not exceeding four doses daily.

Children 6-12 years—One-half adult dosage.

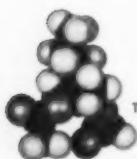
Younger children—Adjust dosage according to age.

packaging

CORICIDIN[®] Syrup, 4-ounce, pint and gallon bottles.

[†]Exempt narcotic. CB-2-64-156

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THE MILTOWN MOLECULE

Two articles in the April 30th issue of The Journal of the AMA^{1,2} report on . . .

**an entirely new type of tranquilizer
with muscle relaxant action—orally effective in**

ANXIETY, TENSION and MENTAL STRESS

- no autonomic side effects—well tolerated
- selectively affects the thalamus
- not related to reserpine or other tranquilizers
- not habit forming, effective within 30 minutes for a period of 6 hours
- supplied in 400 mg. tablets. Usual dose:
1 or 2 tablets—3 times a day

1. Selling, L. S.: J.A.M.A. 157: 1594, 1955. 2. Borrus, J. C.: J.A.M.A. 157: 1596, 1955.

Miltown[®]

the original meprobamate—2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U. S. Patent 2,724,720

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Born over seventy years ago in a sod house (dirt roof and dirt floor) in Nebraska, Dr. Groom attended a sod schoolhouse until he was ten years old.

When he finished high school, he began working and later attended Northwestern University Medical School. He graduated in 1909.

Dr. Groom is still a practicing physician in Idaho and plans to be a cowboy when he retires.

A. P. Groom, M.D.
Box 309
Pocatello, Idaho

Dr. Groom at Cheyenne Rodeo 1904, year before entering medical school.



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for both mother and child*

throughout pregnancy with

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the Mol-Iron® prenatal supplement

Guard against nutritional debits in your pregnant patients by prescribing Gestatabs.

Prevent iron deficiency anemias with well-tolerated Mol-Iron

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There are substitutes for the mercury-type sphygmomanometer which undeniably have certain superficial advantages. But there is no substitute for unfailing accuracy, which *only* the true mercury-gravity instrument can assure.

The mercury displacement principle in bloodpressure measurement excludes the possibility of functional error in the instrument itself. It does not depend on the elasticity of metal, which varies, or on moving parts, which wear. Its action is governed solely by gravity—the most constant and unequivocal force known. As such, it provides the standard against which other types of manometers must be calibrated and checked when their accuracy is in doubt.



The Kompak Model.

*Other models,
available:
the Standby,
the '300',
and the Wall Model.*

The W. A. Baum Company makes true mercury-gravity manometers exclusively. We grant that precise accuracy in a bloodpressure reading may not in all cases be especially important. But if just one possibility for compounding error can be eliminated, is there any point in settling for less?

To be sure



See them at your dealer's.

'Hydrospray'

NASAL
SUSPENSION

(HYDROCORTONE® WITH PROPADRINE® AND NEOMYCIN)

*Anti-inflammatory—
Decongestant—Antibacterial*

MAJOR ADVANTAGES: New synergistic anti-inflammatory, decongestant and antibacterial formula. High steroid content assures effective response.



Topically applied hydrocortisone¹ in therapeutic concentrations has been shown to afford a significant degree of subjective and objective improvement in a high percentage of patients suffering from various types of rhinitis. HYDROSPRAY provides HYDROCORTONE in a concentration of 0.1% plus a safe but potent decongestant, PROPADRINE, and a wide-spectrum antibiotic, Neomycin, with low sensitization potential. This combination provides a three-fold attack on the physiologic and pathologic manifestations of nasal allergies which results in a degree of relief that is often greater and achieved faster than when any one of these agents is employed alone.

INDICATIONS: Acute and chronic rhinitis, vasomotor rhinitis, perennial rhinitis and polyposis.

SUPPLIED: In squeezable plastic spray bottles containing 15 cc. HYDROSPRAY, each cc. supplying 1 mg. of HYDROCORTONE, 15 mg. of PROPADRINE Hydrochloride and 5 mg. of Neomycin Sulfate (equivalent to 3.5 mg. of neomycin base).



Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

REFERENCE: 1. Silcox, L. E., A.M.A. Arch. Otolaryng. 60:431, Oct. 1954.



to restore appetite and promote weight gain in reluctant feeders

LACTOFORT[®]

- improves protein utilization*
- restores healthy appetite*
- accelerates weight gain*
- encourages normal growth*

Lactofort is the first and only dietary supplement for infants and children that provides sufficient quantities of the growth essential amino acid, *L-lysine*, along with *all essential vitamins, iron, and calcium*.

Supplied: In 46 Gm. bottles with special Lactofort measuring spoon enclosed.

LACTOFORT the complete dietary supplement
2 measures (2.3 Gm.) of Lactofort supply:

L-Lysine Monohydrochloride	660 mg.*
Vitamin A Acetate	3,750 U.S.P. units
Vitamin D	1,000 U.S.P. units
Thiamine Mononitrate	0.75 mg.
Riboflavin	1.25 mg.
Niacinamide	7.5 mg.
Vitamin B ₁₂	2.5 mcg.
Folic Acid	0.25 mg.
Ascorbic Acid (from Sodium Ascorbate)	75 mg.
Pyridoxine Hydrochloride	0.75 mg.
Calcium Pantothenate	7.5 mg.
Iron (elemental) (from Iron Ammonium Citrate Green)	7.5 mg.
Calcium (elemental) (from Calcium Gluconate)	130 mg.

*Equivalent to 500 mg. L-lysine

a dry stable powder • odorless • tasteless • readily soluble



WHITE LABORATORIES, INC., Kenilworth, New Jersey

Medical Teasers

A Challenging Crossword Puzzle for the Physician

(Answers on page 104a)

ACROSS

1. Be dull or spiritless
5. Contagious skin disease
10. Half (Prefix)
14. Proprietary food containing no iron and rich in milk albumin
15. Swelling
16. Vomiting (Comb. form)
17. Suffix indicating compound of sugar and other substance
18. ——— Plates, used in open reduction of fractures
19. Monetary unit of Italy (Pl.)
20. Dwarfism
22. English dentist whose name is associated with the incremental lines of dentin
24. Kidney (Comb. form)
25. Pertaining to Denmark (Comb. form)
26. Stage of a disease
29. Screenings
33. Suborder of the Hemiptera
36. Crude metal
37. Persian poet
38. Girl's name
39. Scrutinize
40. Musical instrument (Abbr.)
41. Inflammation of the fibrous covering of bone
43. Resembling the hardened forewing of an insect
45. Useful
46. Borders
47. Proprietary disinfectant
49. Source of oil of benne
52. Remedy for pain
56. Derived from ammonia
57. Interdiction
59. D——, pain (Span.)
60. Class occurring with greatest frequency in a series of variables
61. King of Moab, oppressor of Israelites

DOWN

2. Knee
3. The lower lateral nasal cartilage
4. Long and slender
5. Affirmatives
6. Muscle
7. Bone (Pl.)
8. Albuminoid substance in pus
9. Signer
10. Paronychia
11. Canadian pathologist (1861-1926): theory explaining heredity
12. Vein (Lat.)
13. Leg——, bean
14. Genus of Lauraceous tree of North America, the root bark of which is aromatic, stimulant, diaphoretic, and carminative
15. Guardians of the oracle of Zeus at Dodona (Gr. myth.)
16. Exude
17. Lake or pool
18. Tubular passage
19. Prophat
20. ———cid, Aluminum Hydroxide is one
21. Prescribed rules for eating (Comb. form)
22. Any subjective sensation, as of light or color
23. Pertaining to the blood
24. Failure of muscular coordination (var.)
25. Sedate
26. Night (Comb. form)
27. Chalices
28. Faculty of perception
29. Instrument for testing the purity of oil
30. ———lasis, intestinal propulsive movements
31. Sum of knowledge regarding food, diet, nutrition
32. Formally precise
33. ———emia, Francis' disease
34. Dissecting instrument
35. Fillet worn around the hair
36. Lack of normal strength
37. ———ritan, one who is compassionate to a fellow in distress
38. Emollient mineral
39. Genus of tropical herbs yielding demulcents
40. Competent
41. Delight
42. Small island north of Scotland, early center of Celtic church
43. The shank
44. Grow older

Contributed by Cleo Hartley Mills

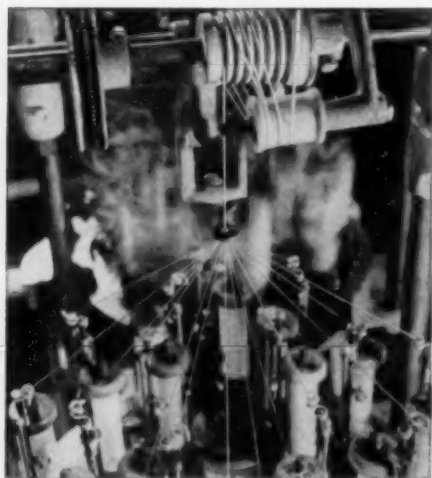
NEW D & G SUTURE SILK

ORDINARY SURGICAL SILK

▲ There's more silk per suture. Photomicrography shows greater strength and uniformity of new D & G suture silk as compared to ordinary silk. See how the x's indicate the high braid count.

TO GIVE YOU STRONGER SILK

D & G BUILDS NEW BRAIDING PLANT TO GIVE YOU THE HIGHEST BRAID COUNT



▲ For greatest strength of silk in a given diameter, D & G especially redesigned this machine. To braid so many filaments so tightly into a single 10-foot strand of 4-0 silk takes one hour. Rigid control of humidity and temperature during braiding keeps silk uniformly strong and pliable.

This is the new D & G suture silk, the first to be produced in a suture laboratory rather than a textile mill. New processing techniques, beginning with triple-A quality raw silk, provide ANACAP® silk with a higher braid count. A higher braid count gives stronger silk—a firmer, more uniform strand.

There's more silk per suture. Greater tensile strength permits use of smaller-diameter sizes, with less resulting tissue trauma and foreign body reaction. *It's easier to handle.* Braided to minimize "splintering" and "whiskering," ANACAP silk passes readily through tissues. Firmer, it sets in swift sure knots, it won't "bush"—threads with ease. *Absolutely non-capillary,* it has no wick-like action, resists body fluid and won't spread early localized infection. *Economical,* ANACAP silk withstands sterilization at least 6 times.

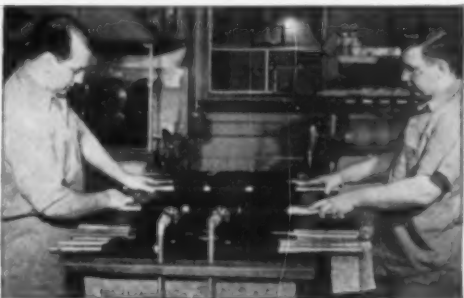


▲ Not only uniform tensile strength, but also uniform texture and diameter of strands result when D & G stretches wet silk from 5% to 20%, depending on size. This precise stretching aligns the molecules for utmost strength.

D & G suture silk is dye-fast to a standard never before achieved. Neither xylol, boiling water, nor autoclaving affects the vegetable logwood dyes.



▲ Softer and cleaner silk comes from purification. D & G's special solution removes all gum and other impurities.



Save time and money
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- ▲ 1. Surgilope® Sterile Pack (Seventeen 18" strands—dry, pre-cut)
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Save, too, with

Dry-tubed, sterile (Seventeen 18" strands, pre-cut)

Sterile tubed, with Atraumatic® needles

Pre-threaded—on milliner needles (18" lengths, sizes 4-0, 000)

Spoiled (25' and 100' lengths)

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Method used: reflected illumination, 75 x. Material used: black braided silk sutures, size 4-0.



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VITERRA[®] TASTITABS^{*}

the family vitamin *(with minerals)*

NEW



chew it • swallow it



add to formula



let it melt in the mouth



dissolve in liquids

Each VITERRA TASTITAB contains:

Vitamin A	5,000 Units
Vitamin D	1,000 Units
Vitamin B ₁ (Thiamine Mononitrate)	1 mg.
Vitamin B ₂ (Riboflavin)	2 mg.
Vitamin B ₆ (Pyridoxine HCl)	1 mg.
Vitamin B ₁₂ (Crystalline)	2 mcg.
Vitamin C (from Sodium Ascorbate)	50 mg.
Niacinamide	12 mg.
Calcium Pantothenate	2 mg.
Cobalt (from Cobalt Carbonate)	0.014 mg.
Copper (from Copper Oxide)	0.07 mg.
Iodine (from Potassium Iodide)	0.05 mg.
Iron (from Reduced Iron)	1 mg.
Potassium (from Potassium Iodide)	0.016 mg.
Molybdenum (from Sodium Molybdate)	0.01 mg.
Manganese (from Manganese Carbonate)	0.028 mg.
Magnesium (from Magnesium Oxide)	0.108 mg.
Zinc (from Zinc Oxide)	0.071 mg.

DOSAGE: Usually one TASTITAB daily.

SUPPLIED: Bottles of 100 TASTITABS.

Also available in capsule form.

New cherry-flavored tablet
may be taken five ways.
One bottle
serves the whole family.



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^{*}Trademark

LETTERS TO THE EDITOR

This department is offered as an Open Forum for the discussion of topical medical issues. All letters must be signed. However, to protect the identity of writers, who are invited to comment on controversial subjects, names will be omitted when requested.

Anesthesia Supervision

Dear Dr. Friedman:

In your interesting article in the *MEDICAL TIMES* for September 1955, Vol. 83, No. 9, page 930-931, I find in paragraph 3 of the summary, the following:

"3. A Nurse Anesthetist must administer anesthesia under the supervision or direction of a licensed physician . . ."

You used the word "must." What is the authority for such a word? It would appear that it permits no exceptions.

What is the definition for "under supervision or direction . . .?" Would the fact that a licensed physician designated by the hospital as an Anesthetist satisfy the above—under supervision and direction—*ipso facto*?

Again you refer to "pre-operative and pre-anesthetic examination." Am I to infer that a pre-anesthetic examination should be performed by the licensed physician-anesthetist?

I hope this does not inconvenience you but I would like some authoritative

—Continued on page 52a

(Vol. 84, No. 3) MARCH 1956

TENSODIN

In Spastic and Occlusive Vascular Diseases

TENSODIN is indicated in angina pectoris and other coronary conditions for its antispasmodic, vasodilator and sedative effects.

Each TENSODIN tablet contains ethaverine hydrochloride (non-narcotic ethyl homolog of papaverine) $\frac{1}{2}$ grain, phenobarbital $\frac{1}{4}$ grain and theophylline calcium salicylate 3 grains.

No narcotic prescription is required.



Tensodin® is a product of E. Bilhuber, Inc.

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Orange, New Jersey, U. S. A.

to help you in the varied phases of infant feeding—Mead products and services

**Manifestations
of food allergies**

Symptoms and complications
that have been reported in
infants and children with
food allergies include:

Eczema

Gastrointestinal symptoms

- Diarrhea
- Colic
- Constipation
- Abdominal distention
- Belching
- Epigastric distress
- Abdominal soreness
- Nausea
- Vomiting
- Mucous colitis
- "Celiac" symptoms
- Pruritus ani

General symptoms

- Canker sores
- Coated tongue
- Coughing
- Asthma
- Weakness
- Irritability
- Nervousness
- Mental dullness and
depression
- Aching
- Fever

the formula for general use

LIQUID **Lactum**

ready-prepared milk and Dextri-Maltose® formula

the formula for babies allergic to milk

LIQUID **Sobee**

hypoallergenic soya formula **milk-free**

to help you in instructing mothers

When you prescribe *Liquid Lactum*,® you provide all the nutritional safeguards of a milk and carbohydrate formula in carefully balanced proportions—plus the convenience appreciated by modern mothers.

Lactum is the only infant formula that offers all these advantages:
authoritative formulation;
generous protein; spaced carbohydrate absorption;
whole milk nutrients;
optimal digestibility;
maximum convenience.

When you prescribe *Liquid Sobee*,® you provide a balanced soya formula that tastes good and is exceptionally well taken and well tolerated by milk-sensitive babies. Both gastrointestinal symptoms and eczema are usually relieved promptly.

Advantages of *Liquid Sobee* made possible by its "thermoflash" sterilization include pleasant bland flavor, with no burned bean taste; appetizing light color. No added carbohydrate is needed. Stools are satisfactory, diaper staining no problem.

Mead Johnson & Company offers you various printed aids to help you tell mothers how to feed and take care of their babies. For instance, we have prepared a leaflet on how to breast-feed babies, as well as a booklet on formula preparation and feeding. For a supply of either of these, ask your Mead representative, or write to Mead Johnson & Company, Evansville 21, Indiana.

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"This hat makes me look almost as young as I feel!"



Good health during life's later years is a constant delight to those who have it. To help these spirited people sustain their activities, many doctors prescribe regular dietary supplementation with GEVRAL. This special geriatric formula provides 14 vitamins, 11 minerals, and Purified Intrinsic Factor Concentrate—all in one convenient, dry-filled capsule.

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Geriatric Vitamin-Mineral Supplement *Lederle*



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LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

*REG. U.S. PAT. OFF.

Each GEVRAL Capsule contains:

Vitamin A	5000 U.S.P. Units	Choline Dihydrogen Citrate	100 mg.	Calcium (as CaHPO_4)	145 mg.
Vitamin D	500 U.S.P. Units	Inositol	50 mg.	Phosphorus (as CaHPO_4)	110 mg.
Vitamin B ₁	1 mcgm.	Ascorbic Acid (C)	50 mg.	Boron (as $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$)	0.1 mg.
Thiamine Mononitrate (B ₁)	5 mg.	Vitamin E (as tocopheryl acetates)	10 I.U.	Copper (as CuO)	1 mg.
Riboflavin (B ₂)	5 mg.	Rutin	25 mg.	Fluorine (as CaF_2)	0.1 mg.
Niacinamide	15 mg.	Purified Intrinsic Factor Concentrate	0.5 mg.	Manganese (as MnO_2)	1 mg.
Folic Acid	1 mg.	Iron (as FeSO_4)	10 mg.	Magnesium (as MgO)	1 mg.
Pyridoxine HCl (B ₆)	0.5 mg.	Iodine (as KI)	0.5 mg.	Potassium (as K_2SO_4)	5 mg.
Ca Pantothenate	5 mg.			Zinc (as ZnO)	0.5 mg.

Other Lederle geriatric products include: GEVRABON[®] Vitamin-Mineral Supplement Liquid with a wine flavor; GEVRAL[®] Protein Vitamin-Mineral-Protein Supplement Powder; and GEVRINE[®] Vitamin-Mineral-Hormone Capsules.



Local Youngsters In Child's Dream Birthday Party

Sharing the same birthday, seven children from the Magnolia Hollow section were yesterday given a joint party by Mrs. James Robb, Jr.

Dressed dolls, Davy Crockett caps, and games vied with refreshments for the children's attention. "Each child," said Mrs. Robb, "was given ham salad sandwiches, potato salad and a choice of pastries."

Diarrhea... the uninvited guest

To combat susceptible infectious forms, **STREPTOMAGMA** combines potent antibacterial, adsorptive, and protective actions. Soothes the bowel, encourages formation of normal stools. For routine management in other forms of diarrhea, prescribe **KALPEC®**—pectin with kaolin in alumina gel.



STREPTOMAGMA®



Dihydrostreptomycin Sulfate and Pectin with Kaolin in Alumina Gel

Philadelphia 1, Pa.



LETTERS TO THE EDITORS

—Continued from page 47a

information to cite regarding nurses giving anesthesia without any apparent or immediate supervision except the presence of the operating surgeon who by his mere presence and operating might be construed as supervision. I understand this is a common practice in some private institutions—due to scarcity of trained anesthetists or financial advantage to the institution.

I have been trying for some time to get some positive information and the two attorneys from whom I sought the information gave me guarded and evasive answers—so your article stimulated me to try again.

Thanking you in advance.

Joseph L. McGoldrick, M.D.
Brooklyn, New York

Dear Dr. McGoldrick:

The nurse anesthetist who administers anesthesia independently, not under the supervision or direction of a licensed physician, is practicing medicine. It would be so construed even though the nurse would be thoroughly qualified by experience and training. Anyone, therefore, who is not a licensed physician who administers anesthesia must do so under supervision.

"Under supervision or direction" means under "control." A nurse is not expected to exercise judgment. The phrase means what it says . . . she should be under supervision. The fact that a physician designated by the hospital is merely designated as such would NOT ipso facto become the source of "supervision and control."

The pre-anesthetic examination is a

—Concluded on page 56a



27/2245M

CREATE A HAPPY MEDIUM
with NEW

Ritalin®

... a mild cortical stimulant which gently lifts the patient out of fatigue and depression without swings of reaction caused by most stimulants. Ritalin counteracts the oversedation of barbiturates, chlorpromazine, rauwolfia, antihistamines... yet has no appreciable effect on blood pressure, pulse rate or appetite.

CIBA
SUMMIT, N. J.

Don't
overstimulate
the
depressed
patient...



Supplied: Tablets,
5 mg. (yellow), 10 mg.
(blue) and 20 mg.
(peach-colored).
Dosage: 5 to 20
mg. b.i.d. or
i.i.d., adjusted
to the individual.
RITALIN®
hydrochloride (methyl-
phenylacetate
hydrochloride CIBA)



allergic dermatosis...after short term
therapy with TERRA-CORTRIL Topical Ointment

touch
and GO

administration promptly
followed by remission



a typical response to
dual **anti-infective anti-inflammatory** action

TERRA-CORTRIL[®]

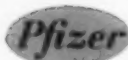
brand of oxytetracycline and hydrocortisone

TOPICAL OINTMENT

combines TERRAMYCIN,[®] the broad-spectrum antibiotic of choice in pyogenic dermatoses,
with the superior action of CORTRIL,[®] the topical anti-inflammatory hormone of choice.

supplied: In 1/2-oz. tubes containing 3% oxytetracycline hydrochloride (TERRAMYCIN) and 1% hydrocortisone, free alcohol (CORTRIL) in a specially formulated, easily applied ointment base.

also available: CORTRIL Topical Ointment and CORTRIL Tablets.



PFIZER LABORATORIES

Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, New York

“Functional vomiting

should be carefully distinguished from organic vomiting. Grave consequences may follow if evidences of organic derangement . . . are masked by treatment designed to control vomiting alone.”¹

SAFE

Safety First | in emesis therapy

Prescribe

EMETROL[®]

(Phosphorated Carbohydrate Solution) *First*

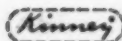
SAFE

EMETROL will not suppress symptoms arising from organic etiology. It controls vomiting of functional origin quickly.

Dosage: Adults, 1 or 2 tablespoonfuls; infants and children, 1 or 2 teaspoonfuls, as often as every 15 minutes. Always administer *undiluted*, and forbid oral fluids for at least 15 minutes after each dose. Even if first dose is not retained, continue administration. If vomiting is not controlled within one or two hours, look for organic etiology. For individual dosage regimens in various indications, please send for literature.

1. Bradley, J. E.: *Mod. Med.* 20:71, No. 20, 1952.

SAFE



KINNEY & COMPANY, INC. Columbus, Indiana



**In 30 minutes –
antibacterial
action begins**



**In 24 hours –
turbid urine
usually clear**

*"...it appears that Furadantin is
one of the most effective single agents
available at this time."**

Furadantin[®]

BRAND OF NITROFURANTOIN

IN URINARY TRACT INFECTIONS

- specific affinity for the urinary tract produces high antibacterial concentrations in urine in minutes—continuing for hours
- hundreds of thousands of patients treated safely and effectively
- rapidly effective against a wide range of gram-positive and gram-negative bacteria, including many strains of *Proteus* and *Pseudomonas* species and organisms resistant to other agents
- excellent tolerance—nontoxic to kidneys, liver and blood-forming organs
- no cases of monilial superinfection ever reported

SUPPLIED: Tablets, 50 and 100 mg. in bottles of 25 and 100.
Oral Suspension, 5 mg. per cc. bottle of 118 cc.

*Breskey, R. S.; Holt, S. H., and Siegel, D.:
J. Michigan M. Soc. 54: 805, 1955.

EATON LABORATORIES, Norwich, N. Y.



NITROFURANS

a new class of antimicrobials
neither antibiotics nor sulfas

LETTERS TO THE EDITORS

—Concluded from page 52a

part of the procedure which culminates in the anesthesia. A licensed physician should conduct the pre-anesthetic examination since evaluation, election and judgment might be involved. It must be remembered that a nurse is not expected to exercise judgment; a doctor does this when he practices medicine.

Everyone is responsible for his own negligence. However, the operating surgeon would be held responsible also for the negligence of a nurse anesthetist if there should be any. If a qualified physician anesthetist is negligent, ordinarily the operating surgeon would be free of liability since the former acts as an independent contractor. These are

responsible for their own negligence unless in addition it could be proven that the surgeon knew, or should have known, of the negligent procedure and allowed it to be carried out.

The Editors

MT Best of All

I have not received my latest copy of MEDICAL TIMES and miss it very much. Will you please investigate and if at all possible send me another.

In my time I have subscribed to and received many medical journals and in my opinion MEDICAL TIMES is the best of all. That is why I miss it.

I thank you and hope I shall receive it for a long time to come.

Frank A. Brennen, M.D.
Westbury, New York

because your allergic patients need a lift ...

a new Rx **Plimasin®**

(tripelenamine hydrochloride and methyl-phenidylacetate CIBA)

mild stimulant and antihistamine

boost their spirits ...

relieve their allergic symptoms

Each Plimasin tablet contains 25 mg. Pyribenzamine® hydrochloride (tripelenamine hydrochloride CIBA) and 5.0 mg. Ritalin® (methyl-phenidylacetate CIBA).

Dosage: One or 2 tablets as required.

CIBA
SUMMIT, N. J.

R/2224W





a "judicious combination..."

for antiarthritic therapy

SALCORT*

That cortisone and the salicylates have a complementary action has been well established.¹⁻⁵ In rheumatic conditions, functional improvement and a sense of feeling well are noted early. No withdrawal reactions have been reported.

One clinician states: "By a judicious combination of the two agents . . . it has been possible to bring about a much more favorable reaction in arthritis than with either alone. Salicylate potentiates the greatly reduced amount of cortisone present so that its full effect is brought out without evoking undesirable side reactions."¹

INDICATIONS:

Rheumatoid arthritis . . . Rheumatoid spondylitis . . . Rheumatic fever . . . Bursitis . . . Still's disease . . . Neuromuscular affections

EACH TABLET CONTAINS:

Cortisone acetate	2.5 mg.
Sodium salicylate	0.3 Gm.
Aluminum hydroxide gel, dried	0.12 Gm.
Calcium ascorbate	60 mg.
(equivalent to 50 mg. ascorbic acid)	
Calcium carbonate	60 mg.



U.S. Pat. 2,691,662

BRISTOL, TENNESSEE

NEW YORK

KANSAS CITY

SAN FRANCISCO

1. Busse, E.A.: Treatment of Rheumatoid Arthritis by a Combination of Cortisone and Salicylates. *Clinical Med.* 11:1105 (Nov., 1955).
2. Roskam, J., VanCawenberge, H.: *Abst. in J.A.M.A.*, 151:248 (1953).
3. Coventry, M.D.: *Proc. Staff Meet., Mayo Clinic*, 29:60 (1954).
4. Holt, K.S., et al.: *Lancet*, 2:1144 (1954).
5. Spies, T.D., et al.: *J.A.M.A.*, 159:645 (Oct. 15, 1955).

The S. E. Massengill company



protects your pregnant patients

one tablet t.i.d.

DECHOLIN® with Belladonna

(dehydrocholic acid and belladonna, Ames)

hydrocholeresis—more fluid bile enhances biliary flow over 100 per cent¹—protects against bile stasis¹ and excessive concentration, often associated with gallstone formation.^{2,3}

spasmolysis combats biliary dyskinesia—relieves hypertonic dyskinesia, frequently present in pregnancy²—helps prevent related pain, nausea and vomiting.

and natural laxation without catharsis prevents colonic dehydration⁴ and biliary constipation—acts as a "...physiologic stimulant to evacuation..."⁴

Decholin with Belladonna Tablets, dehydrocholic acid 3¾ gr. and extract of belladonna ¼ gr. Bottles of 100 and 500.

(1) Crenshaw, J. F.: *Am. J. Digest. Dis.* 17:387, 1950. (2) Lichtman, S. S.: *Diseases of the Liver, Gallbladder and Bile Ducts*, ed. 3, Philadelphia, Lea & Febiger, 1953, vol. 2, p. 951. (3) Sherlock, S.: *Diseases of the Liver and Biliary System*, Springfield, Charles C Thomas, 1955, p. 642. (4) King, J. C.: *Am. J. Digest. Dis.* 22:102, 1955.



AMES COMPANY, INC. • ELKHART, INDIANA
Ames Company of Canada, Ltd., Toronto

OTR 56

IT'S COMBINED EFFORT THAT COUNTS

It's the combined effort of men "on the rope" that finally conquers the wind-swept peaks. It's the combined action, too, of vitamins *and* minerals that results in prompt and effective nutritional supplementation.

Correlated vitamin-mineral actions of NUTRISUP Chimedie—essential for efficient cellular metabolism and optimal physiological activity—have brought a gratifying and ready response in the many conditions where additional nutritional supplements are urgently needed.

In pregnancy and lactation, anemia, during convalescence, in geriatrics, and subclinical physiologic disturbances, NUTRISUP's 11 vitamins and 14 minerals—including the potent hemopoietic factors, vitamin B₁₂, intrinsic factor and folic acid—have demonstrated their combined synergetic actions with beneficent effect.

Specify NUTRISUP Chimedie Tablets whenever added vitamins, minerals and hemopoietic factors are needed. You can rely on a quick, an encouraging and a complete response.

NUTRISUP *Chimedie*

VITAMIN MINERAL SUPPLEMENT

CHICAGO PHARMACAL COMPANY

5547 N. Ravenswood Ave., Chicago 40, Illinois

NORTHWEST BRANCH: 5513 Airport Way, Seattle, Wash.

WESTERN BRANCH:

1161 W. Jefferson Blvd., Los Angeles, Cal.

SOUTHERN BRANCH:

240 Spring St. N. W., Atlanta, Ga.

DOCTORS NOTES

NAME *Harvey, James*

WARD 6/4 HISTORY No. 195261

DATE	EXAMINATIONS, REMARKS, DAILY NOTES, ETC.
7/20/55	Child remains afebrile. Sed. rate, blood count continue normal. Slow, steady gain in wt. for past month, to 61 lbs. Apical systolic murmur still present. No tachycardia. Has been ambulatory for 3 weeks. To be released in 1 week. Discontinue penicillin. Start on prophylactic dosage Elkosin Syrup 0.5 Gm. (2 tsp.) b.i.d. for first day, then 0.5 Gm. daily.

7/21/55	Physical and laboratory findings unchanged. Appetite improved. To be released with instructions to continue <u>Elkosin 0.5 Gm. daily.</u> Report O.P.D. in 2 weeks.
---------	---

Gram for gram Elkosin® is the most effective single soluble sulfonamide. for it achieves therapeutic blood levels with standard sulfonamide dosage.

Discharge diagnosis: *rheumatic fever in remission*

ELKOSIN® (sulfisomidine CIBA)

C I B A SUMMIT, N. J.

2/2254M

MODERN MEDICINALS

These brief resumes of essential information on the newer medicinals, which are not yet listed in the various reference books, can be pasted on file cards and a record kept. This file can be kept by the physician for ready reference.

Amitrate Tablets, Kremers - Urban Company, Milwaukee 1, Wisconsin. For treating coronary insufficiency. **Dose:** As determined by physician. **Sup:** In bottles of 100 tablets.

Camoform, Parke, Davis & Company, Detroit 32, Michigan. Used in treatment of intestinal amebiasis. **Dose:** As determined by physician. **Sup:** Camoform hydrochloride tablets, 250 mg., in tubes of 20 grooved tablets.

Deca-Mulcin, Mead Johnson Company, Evansville 21, Indiana. A pleasant tasting orange flavored emulsion containing 10 nutritionally significant vitamins which pleases pre-school children. Protects against possible dietary deficiencies. **Dose:** As determined by physician. **Sup:** In 4 and 8 ounce bottles.

Deca-Vi-Caps, Mead Johnson Company, Evansville 21, Indiana. A small easily swallowed capsule readily accepted by children of school age. Provides generous vitamin protection during years of active growth. **Dose:**

As determined by physician. **Sup:** In bottles of 30 capsules.

Dermaplast Aerosol, Doho Chemical Co., New York 13, New York. An aerosol spray for fast relief of surface pains, itching in wounds, obstetrical and gynecologic use in perineal suturing, hemorrhoids and pruritus ani and vulvae. **Dose:** As determined by physician. **Sup:** In 3 ounce spray can.

Doxinate Capsules, Lloyd Brothers, Cincinnati, Ohio. Orange, soft gelatin capsule containing 20 mg. dioctyl sodium sulfo-succinate. Fecal-softening product designed to provide non-laxative method of preventing and treating constipation. **Dose:** Adults take one capsule daily for several days or until bowel movements become normal. **Sup:** In bottles of 30 and 100 capsules.

Flexin, McNeil Laboratories, Inc., Philadelphia 32, Pennsylvania. Generically zoxazolamine, a newly synthesized compound unrelated to any available

—Continued on page 64a



now...reinforced anti-inflammatory action

for better results in rheumatic and arthritic conditions

Armyl+F

Armyl + F greatly reinforces the antirheumatic and antirheumatic action of the salicylates. Synergistic action of the combination of agents in Armyl + F produces significantly better patient response with an extremely low dose of corticoid.

Each Armyl + F capsulette contains:

Compound F (hydrocortisone-free alcohol).....	2.0 mg.
Potassium Salicylate (5 gr.).....	0.30 Gm.
Potassium Para-aminobenzoate (5 gr.).....	0.30 Gm.
Ascorbic Acid.....	80 mg.

Bottles of 50 capsulettes.

but when the salicylates alone are enough

Armyl® for high salicylate blood levels... relief of pain... antihemorrhagic protection.

Each enteric-coated tablet contains:

Sodium Salicylate (5 gr.).....	0.3 Gm.
Sodium Para-aminobenzoate (5 gr.).....	0.3 Gm.
Ascorbic Acid (50 mg.).....	0.05 Gm.

Bottles of 100. Also available: Armyl with 1/4 gr. Phenobarbital; Armyl Sodium-Free; Armyl Sodium-Free with 1/4 gr. Phenobarbital.



THE ARMOUR LABORATORIES

A DIVISION OF ARMOUR AND COMPANY • KANKAKEE, ILLINOIS

Doctor, meet ... **FLAVO-C**

TRADE MARK



THE CHAMP



DOSAGE:

1 or 2 Flavo-C capsules four times daily for therapy.

Maintenance:
1 or 2 daily.

"... in the presence of streptococcal infection, Vitamin C deficiency disposes the individual to the development of rheumatic fever ... It appears that there is much evidence which constitutes a sound basis for the use of ascorbic acid and bioflavonoids in the prophylaxis and treatment of rheumatic fever. (1)

Capillary damages and their consequences in viral infections are important not only for the pathogenesis of these diseases, but also for their therapy. (2)

Through some type of chemical reaction in the liver, hesperidin acting as a catalyst, Vitamin C is combined with an intrinsic factor (protein) to form the intercellular substance. (3) "

SOURCES:

- (1) James F. Ninehart, University of California School of Medicine.
- (2) Lyon, E., Capillary syndrome in Viral Diseases; Cardiology 24:143 1954.
- (3) Seisman, G. J. V. & S. Meropchak, Am. J. Digestive Diseases 17:32 1950.

Let him wrestle with your tough problems in Respiratory Diseases. Let him attack Common Colds, Viruses and Bleeding States by strengthening Connective Tissue Ground Substance! — "Battler" FLAVO-C will be useful for many disease states for which no specific therapy has been available.

Double Strength! Same Cost!

HESPERIDIN PURIFIED200 MG
ASCORBIC ACID200 MG

Maximum Therapy! Minimum Capsules!

FLAVO-C

helps to resist disease invasion and increase body defenses



FINER PHARMACEUTICALS

BOISE, IDAHO

agent. The first drug truly effective orally for the relief of muscle spasm in musculoskeletal and neurological disorders. These include low back pain, fibrositis, spondylitis and rheumatoid arthritis; and spinal spasticity states, cerebral palsy, multiple sclerosis, cerebral vascular accidents and Parkinson's disease. **Dose:** As determined by physician. **Sup:** In bottles of 50 yellow scored tablets of 250 mg. each.

Gerizyme, The Upjohn Company, Kalamazoo, Michigan. Dietary supplement and tonic providing 18 vitamin B factors and minerals often deficient in elderly patients' diets. A wine-like flavored liquid which also stimulates the appetite. Gerizyme contains, per tablespoon (approx. 15 cc.), 75 mg. of liver concentrate; 43.17 mg. ferrous gluconate; 100 mgs. each of calcium glyverophosphate, inositol, and tri-choline citrate; 3.3 mg. each of thiamine hydrochloride, riboflavin, and d-pantothenyl alcohol; 1 mg. pyridoxine hydrochloride; 33.3 mg. nicotinamide; 3.3 mcg. of B₁₂ activity; .033 mg. cobalt; .33 mg. of copper and manganese; 2 mg. magnesium and potassium; .066 molybdenum; .5 mg. zinc and 18 per cent alcohol. A diet supplement for elderly patients. **Dose:** Orally—1 teaspoonful 3 times daily, or as determined by physician. **Sup:** In 12 ounce bottles.

Lorinal Capsules, Arnar-Stone Laboratories, Inc., Mount Prospect, Illinois. A new convenient form of chloral hydrate, providing 1.0 Gm., (15 gr.) dosage in a single, small capsule. Previous capsules have contained only up to 0.5 Gm. (7½ gr.) As the usual prescription for chloral hydrate for hypnosis is 1.0 Gm., this makes pos-

sible single capsule administration. The capsules are smaller than the usual 0.5 Gm. capsule and are easily swallowed. Lorinal drops are particularly indicated in pediatrics and geriatrics. **Dose:** As determined by physician. **Sup:** Capsules of 1.0 Gm., (15 gr.) in bottles of 50; of 0.5 Gm. (7½ gr.) in bottles of 100. Drops in 15 cc. dropper bottles.

Meticortelone Acetate Aqueous Suspension, Schering Corporation, Bloomfield, New Jersey. Prednisolone acetate 25 mg. suspended in saline solution. A new "Meti" injectible suspension designed expressly for localized intra-articular therapy of rheumatoid arthritis and osteoarthritis and post-traumatic bursitis. **Dose: Intra-articular:** the average dosage for larger joints is 25 mg. (1 cc.), while 10 to 15 mg. usually is sufficient for smaller joints. Severely inflamed joints may require 1 or more injections a week. In acute bursitis a single injection of 25 mg. (1 cc.) or occasionally 37.5 mg. (1.5 cc.) usually is sufficient for complete relief. A 2nd injection may be given in 3 to 5 days as required. **Sup:** 25 mg./cc., 10 cc. multiple dose vial, boxes of 1 and 6.

Neo-Delta-Cortef, 0.5%, The Upjohn Company, Kalamazoo, Michigan. A topical ointment which contains prednisolone acetate with Neomycin sulfate. Indicated in management of various forms of allergic dermatitis and other inflammatory skin diseases such as contact dermatitis, atopic dermatitis, neurodermatitis, seborrheic dermatitis, and pruritus ani and vulvae. Each gram contains delta-1-hydrocortisone acetate 5 mg. (0.5%); neomycin sulfate 5 mg. (equivalent to 3.5 mg. neomycin base); methylpara-

—Continued on page 68a



for your
postoperative patients

safe and sure laxation

Agoral relieves constipation gently, without strain. A dose at bedtime almost always produces results the next morning. Patients can follow their normal daily routine because Agoral does not provoke the sudden urge induced by strong laxatives.

Excellent for postoperative patients who should avoid undue strain but who should resume as soon as possible their normal routine. Agoral is also well suited to all other cases of acute or chronic constipation, where straining or purges are to be avoided: in bedridden patients, during and after pregnancy, in older people and in children.

Agoral mixes readily and uniformly with the intestinal contents during its passage

through the tract. It aids in the retention of fluid in the fecal column, affords lubrication and provides mild peristaltic stimulation. Agoral causes no sudden, uncomfortable griping, distention or stomach distress. Used for prompt relief, it is not habit forming and may be prescribed for protracted periods.

Dosage: On retiring, $\frac{1}{2}$ to 1 tablespoonful. Repeat if needed the following morning, two hours after eating. Contraindications: symptoms of appendicitis; idiosyncrasy to phenolphthalein.

Supplied: Bottles of 6, 10 and 16 fl. oz.; and as Agoral Plain (without phenolphthalein), bottles of 6 and 16 fl. oz.

Agoral[®] *the laxative to meet all needs*
mineral oil emulsion with phenolphthalein

WARNER-CHILCOTT

how doctors avoided 50,000,000 headaches

Until 1929, stomach-aches in babies, and other problems connected with artificial infant feeding, were a major cause of headaches for doctors.

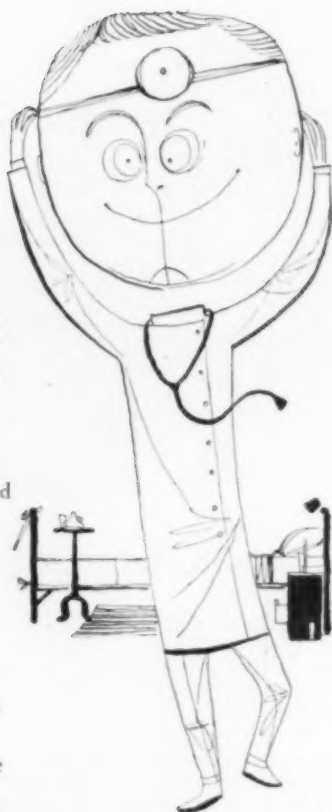
But no more. In that year, medical research determined that evaporated milk is the most satisfactory all-round solution to infant feeding problems.

Since then, more than 50,000,000 babies have made sure, steady growth on evaporated milk formulae . . .

preventing a feeding problem, with its attendant headache for the doctor, 50,000,000 times.

And today, evaporated milk formulae still combine *all* the most essential qualities—the higher level of protein sufficient to duplicate the growth effect of human milk . . . flexibility in carbohydrate adjustment . . . maximum nutritional advantages . . . and *minimum cost*.

PET EVAPORATED MILK
is the "going home" formula for more babies than any other form of milk.



PET MILK COMPANY • ARCADE BUILDING • ST. LOUIS 1, MO.

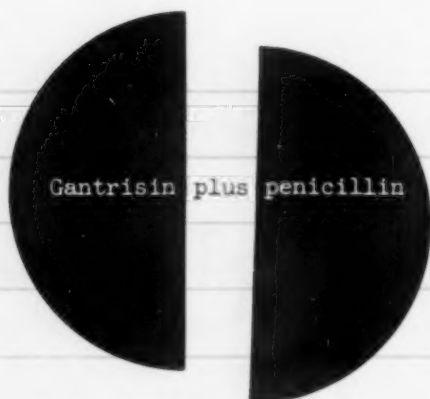
Romilar — a real cough specific

A 10-mg dose of Romilar
equals a 15-mg dose
of codeine in specific
antitussive effect.

Yet Romilar® 'Roche' is
non-narcotic; it does
not cause drowsiness,
nausea or constipation.

Tablets, 10 mg; syrup,
10 mg/4 cc; expectorant,
15 mg Romilar plus
90 mg ammonium chloride
per 5 cc.

ROCHE
Original Research
in Medicine and Chemistry



Gantricillin is Gantrisin plus penicillin
in a single tablet. For severe infections,
Gantricillin-300; for mild infections,
Gantricillin (100); for pediatric infections,
Gantricillin (acetyl)-200 suspension.

Gantricillin® Gantrisin® - brand of sulfisoxazole



original research in medicine and chemistry

NEW!

**Chloral
Compound**

for the
pattern of
normal sleep

PERICLOR[®]

petrichloral (pentaerythritol chloral)

CAPSULES

P

"With pentaerythritol chloral (PERICLOR) an average of two hours more sleep was obtained with one-third to one-half the usual dose of chloral hydrate, and the disadvantages of both chloral hydrate and the barbiturates were avoided."¹

PERICLOR is a new non-barbiturate hypnotic-sedative that brings on natural sleep quickly. When patients awake they feel refreshed and alert. There is no evidence of habituation—or gastric upset.

Gatski found PERICLOR 97.8% effective in 251 patients.

DOSAGE:

Sedative—1 capsule q. 4-6 hours

Hypnotic—2 capsules on retiring

•AVAILABLE: Bottles of 36

1. Gatski, R.L., Pentaerythritol chloral: a new agent for hypnosis and sedation: Am. Pract. & Dig. Treat. 6:1885 (Dec.) 1955.

IVES-CAMERON COMPANY

Philadelphia 1, Pa.



ben 0.2 mg; and butyl-p-hydroxybenzoate 1.8 mg. **Dose:** As determined by physician. **Sup:** In 5 Gm. tubes.

Neo-Delta Cortef, Eye-Ear Ointment 0.25%, The Upjohn Company, Kalamazoo 99, Michigan. Indicated in treatment of following conditions: Eye—marginal ulceration, non-specific superficial keratitis, corneal abscesses; Ear—external-seborrheic dermatitis, contact dermatitis and infected eczematoid dermatitis. **Dose:** As determined by physician. **Sup:** In 1/8 oz. tubes with applicator tips.

Periclor, Ives-Cameron Co., Inc., Philadelphia 2, Pennsylvania. Capsule: hypnotic/sedative. Formula: penterythritol chloral. For natural sleep at night or for daytime sedation. **Dose:** Hypnosis, 2 capsules on retir-

ing. Sedation, 1 capsule qq. 4-6 h. **Sup:** In bottles of 36 capsules.

Phenergan Hydrochloride Injection, Wyeth Laboratories, Philadelphia 2, Pennsylvania. For pre- and post-operative sedation and as an anti-emetic to control post-operative vomiting. Also indicated for relief of allergic conditions amenable to antihistamine therapy when the oral route is not feasible. **Dose:** As indicated by physician. **Sup:** In 10 cc. vials.

Redifact, Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia 1, Pennsylvania. Used as an appetite stimulant and a nutritional supplement. **Dose:** As determined by physician. **Sup:** Redifact tablets in con-

—Concluded on page 72a

Metamine®

triethanolamine trinitrate biphosphate, LEEMING, tablets 2 mg. Bottles of 50 and 500
Dose: 1 or 2 tablets after each meal and at bedtime.

smallest dose lowest toxicity unique amino nitrate

protects
8 out of 10
patients
against angina pectoris



Thos. Leeming & Co., Inc., 155 East 44th Street, New York 17, N. Y.



Sustained androgen therapy
for even
the busiest patient

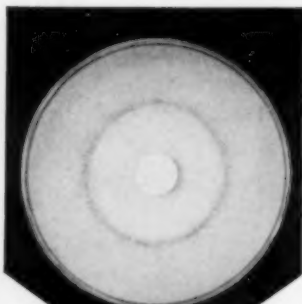
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TABLETS*	50 mg. Scored	Bottles of 100 and 1,000
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tainer of 36 and 100 tablets; Redifact Forte tablets in container of 36 and 100 tablets.

Uritral, Central Pharmacal Company, Seymour, Indiana. Indicated for the treatment of uncomplicated cystitis, pyelitis, pyelonephritis, prostatitis, non-specific urethritis, and as a prophylactic against bacilluria, especially in surgery and instrumentation. **Dose:** As determined by physician. **Sup:** In bottles of 100 and 500 capsules.

'V-Cillin' Suspension, Pediatric, Eli Lilly & Company, Indianapolis 6, Indiana. An acid-resistant, oral penicillin that is replacing oral penicillin-G in treatment of infections. 'V-Cillin' Pediatric comes in dry granular form in a dispensing bottle. Before dispensing, it is reconstituted with 52 cc. of distilled water, making a final volume

of 80 cc. Each teaspoonful contains 125 mg. (200,000 units) of penicillin V. There are sixteen doses in a bottle.

Dose: Recommended dosage for children is 1 teaspoonful every 6 hours. **Sup:** In an 80 cc. (when mixed) bottle.

Vio-Natal, Rowell Laboratories, Inc., Baudette, Minnesota. Each six tablets contain: Ferrous gluconate 15 grains, calcium lactate 15 grains, vitamin A 6000 units, vitamin D 1200 units, vitamin C 100 mg., vitamin K 1 mg., vitamin B₁ 3 mg., vitamin B₂ 3 mg., vitamin B₆ 10 mg., vitamin B₁₂ USP 6 mcg., folic acid 0.75 mg., niacinamide 15 mg. A dietary supplementation in pregnancy and lactation. **Dose:** 2 tablets 3 times a day. **Sup:** Bottles of 100, and 1,000. Drums of 5000, 10,000 and 25,000.

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to relieve symptoms

and help prevent

sequelae of the common cold

FORMULA: each sugar coated tablet contains procaine penicillin G (200,000 units) 200 mg., Bristamin* dihydrogen citrate 25 mg., aspirin 150 mg., phenacetin 120 mg., caffeine 30 mg.

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*Multivitamins in a
NEW soft tablet
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Pleasant tasting

Melts in the mouth

*Children like
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*Sick people like
Mulvidren*

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*Everybody likes
Mulvidren*

*Mothers like
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More complete—Better balanced

ONE TABLET CONTAINS:



A	5000 USP Units
D	1000 USP Units
C	60 mg.
B ₁	2 mg.
B ₂	2 mg.
B ₆	1 mg.
B ₁₂	5 mcg.
Calcium Pantothenate	3 mg.
Niacinamide	10 mg.

DOSE: 1 TABLET DAILY

SUPPLIED: BOTTLES OF 50 AND 100 TABLETS

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When little patients balk at scary, disquieting examinations (before you've begun) . . .

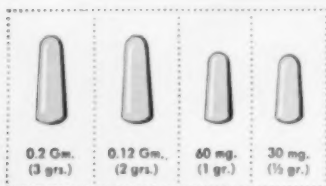
When they're frightened and tense (and more fearful by the minute) . . .

When they need prompt, effective sedation (and the oral route isn't feasible) . . . try

NEMBUTAL®

Sodium Suppositories

With short-acting NEMBUTAL, the dosage required is small and the margin of safety is wide. And—since the drug is quickly and completely destroyed in the body—there is little tendency toward morning-after hangover. Keep a supply of all four sizes of NEMBUTAL suppositories on hand. Be ready for the frightened ones before their fears begin. *Abbott*



® Pentobarbital Sodium, Abbott





Mediquiz

These questions are from a civil service examination recently given to candidates for physician appointments in municipal government.

Like to see how you would fare? Answers will be found on page 118a.

1. The largest number of cases developing spider angiomas have been in association with: (A) acute hepatitis; (B) pregnancy; (C) psoriasis; (D) cholelithiasis.

2. In Addison's disease the ingestion of a large amount of water is followed by: (A) poor diuresis; (B) exaggerated diuresis and dehydration; (C) depression of blood glucose; (D) significant elevation of blood pressure.

3. Of the following statements, the one which may be true in very early lobar pneumonia is that: (A) rales are large and numerous; (B) there is egophony; (C) there may be equivocal or no physical signs; (D) there is marked dehydration.

4. Of the following diseases, the one for which there exists an effective method of active immunization is (A) bacillary dysentery; (B) measles; (C) malaria; (D) yellow fever.

5. The one of the following which is the most appropriate drug for the treatment of acute gouty arthritis in the

early state is: (A) liver extract; (B) penicillin; (C) colchicine; (D) alcohol.

6. The one of the following diseases which is least likely to be confused with acute cholecystitis in a 45 year old man is: (A) mesenteric adenitis; (B) pancreatitis; (C) right lower lobe pneumonia; (D) myocardial infarction.

7. The one of the following findings which would be an indication of failure of medical management of a duodenal peptic ulcer is: (A) repeated recurrence of pain when anti-acid therapy is withdrawn; (B) recurrence of subjective symptoms of ulcer under severe stress; (C) gastric dilation with delayed emptying; (D) persistent fasting hyperacidity.

8. In 45 year old firemen on fire-fighting duty, a common cause for acute shoulder pain without other complaints is: (A) coronary occlusion; (B) shoulder joint osteoarthritis; (C) fracture of the clavicle; (D) subacromial bursitis and tendonitis.

—Concluded on page 81a

in urinary infections

TO MEET THE CHALLENGE OF CHRONICITY IN CYSTITIS • PROSTATITIS
URINARY CALCULI • UROLOGIC INFECTIONS OF PREGNANCY.....



R_x Mandelamine[®] (Brand of methenamine mandelate) Hafgrams[®] 0.5 Gm. (7½ gr.)

FOR EFFECTIVE LONG-TERM MANAGEMENT OF CHRONIC URINARY TRACT INFECTIONS

Mandelamine is effective, safe and specific in prophylaxis and treatment, even when used for prolonged periods. It sustains the patient in comfort by acting against both gram-positive and gram-negative organisms.

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Mandelamine 0.25 Gm. (3¾ gr.) each, enteric-coated tablets, for patients who require smaller doses, or prefer taking the smaller tablets.



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● *notably safe and effective*

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● *convenient to use*

The "Duke" University Inhaler (Model-M) is specially designed for economy, facility of handling, and ready control of vapor concentration.

● *special advantages*

Induction of analgesia is usually smooth and rapid with minimum or no loss of consciousness. Patients treated on an ambulatory basis can usually leave the doctor's office or hospital within 15 to 20 minutes. Inhalation is automatically interrupted if unconsciousness occurs.

"Trilene" alone is recommended only for analgesia, not for anesthesia nor for the induction of anesthesia. Epinephrine is contraindicated when "Trilene" is administered.

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varicose veins
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make skin
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Systemic muscle adenylic acid therapy with *My-B-Den* produces "...a continuous gradual transformation of scaling, oozing, eczematous rough skin to smooth, soft, and wrinkly skin...."* As treatment progresses, edema diminishes, pain and itching subside, and ulcers begin to heal.

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*Lawrence, E. D.; Doktor, D., and Sall, J.:
Angiology 2:405, 1951.

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Bowel-conscious
Patient

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Dehydrocholic acid
250 mg.

Hom... ..

Phenobarbital
8 mg.

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MALTBIE LABORATORIES DIVISION • Wallace & Tiernan Inc. • Belleville 9, N. J.

MEDIQUIZ

—Concluded from page 75a

9. A stocky laborer feels sharp pain in his right shoulder as he is lifting a heavy crate. On examination, patient has moderate pain and soreness in the right shoulder and is unable to adduct the arm more than 15° . The shoulder can be moved passively through most of the normal range. The most likely diagnosis is: (A) impacted fracture of neck of humerus; (B) acute subdeltoid bursitis; (C) rupture of the long head of the biceps; (D) rupture of the supraspinatus tendon.

10. The proper treatment of the patient described in Question 9 is: (A) baking and massage; (B) immobilization in a Velpeau's bandage; (C) support of arm on airplane splint; (D) exploratory operation and repair of injured structures.

11. The etiology of arteriosclerosis obliterans is: (A) unknown; (B) metabolic; (C) infectious; (D) mechanical.

12. In treating phlebitis, anticoagulant therapy is contra-indicated in: (A) the presence of a fracture of long bone; (B) the first two weeks following the operation; (C) cerebral hemorrhage; (D) pulmonary infection.

13. The pathological changes in acute thromboangiitis obliterans are: (A) degenerative; (B) inflammatory; (C) functional; (D) neoplastic.

14. The etiology of Raynaud's disease is: (A) inflammatory; (B) neoplastic; (C) functional; (D) thermal.

15. Hyperuricemia exists in gouty patients: (A) always; (B) never; (C) usually; (D) rarely.

16. The joint pathology most characteristic of rheumatoid arthritis is: (A) cartilage degeneration; (B) inflammation of the synovium and joint capsule; (C) eburnation of subchondral bone; (D) osteophytic proliferation.

17. Radioactive iodine uptake in excess of 35 per cent is usually observed in the course of: (A) acute thyroiditis; (B) myxedema; (C) iodine therapy; (D) thyrotoxicosis.

18. Cortisone as treatment for rheumatoid arthritis: (A) should be routinely used; (B) cannot be dangerous; (C) should never be used; (D) should be beneficial in some cases.

19. Rheumatic fever in a susceptible population is most likely to occur following an outbreak of: (A) influenza; (B) scarlet fever; (C) the common cold; (D) meningitis.

20. A 50 year old man with proven pneumococcal pneumonia had a good initial response to penicillin therapy but, four weeks after onset of pneumonia, a segment of the involved lobe remains consolidated and some fever and cough persist. Of the following, the course of action which should be followed is to: (A) give patient a course of aureomycin; (B) test pneumococci from patient to see if they are resistant to penicillin; (C) bronchoscope patient; (D) prescribe bed rest with periodic X-ray examinations since this probably is a slowly resolving pneumonia.

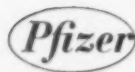
—Answers on page 118a

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and reports by thousands
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BRAND OF OXYTETRACYCLINE

... well-tolerated,
rapidly effective
broad-spectrum
antibiotic of choice.

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forms and special
preparations for
parenteral, topical
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fibrositis responds
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with PREDNISONE

pain, stiffness, swelling relieved;
function improved; a well feeling restored

"also in" myositis, bursitis, neuritis,
subacute or interval gout,
mild rheumatoid arthritis and spondylitis

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*in common rheumatic arthritic disorders
enhanced corticosteroid benefits
with low-dosage safety*

SIGMAGEN TABLETS

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antirheumatic action*

Prednisone 0.75 mg.—the best of the new

Acetylsalicylic acid 325 mg.—best of the old

*plus ascorbic acid 20 mg.—to fortify
the patient against stress*

*and aluminum hydroxide 75 mg.—to minimize
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Packaging: Bottles of 100 and 1000.

SIGMAGEN,* brand of
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BETTER THAN CODEINE **FOR COUGH**¹

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Syrup and oral tablets. Each teaspoonful or tablet of HYCODAN contains 5 mg. dihydrocodeinone bitartrate and 1.5 mg. Mesopin.[®] May be habit-forming. Average adult dose, 1 teaspoonful or 1 tablet after meals and at bedtime.

* Homatropine Methanesulfate

**FASTER
LONGER-LASTING
MORE THOROUGH**

Scored, yellow oral tablets. May be habit-forming. Average adult dose, 1 tablet q. 6 h.

1. Hyman, S., and Rosenblum, S. H.: Illinois M. J. 104:257, 1953.
2. Piper, C. E., and Nicklas, F. W.: Indust. Med. 23:510, 1954.

* U.S. Pat. 2,630,400
U.S. Pat. 2,628,185



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- short-acting Nembutal quickly induces drowsiness at bedtime, followed by refreshing sleep.
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Abbott

Long-Term Experience in the Management of Patients With Diseases of the Heart*

PAUL DUDLEY WHITE, D.Sc., M.D.

Boston, Mass.

DR. ROBERT F. WARREN, President, Kings County Medical Society: I will turn the meeting over to the cardiologists. Dr. William Dock, Professor of Medicine at the State University, will introduce the Guest Speaker.

DR. WILLIAM DOCK: Dr. Warren, Ladies and Gentlemen:

I am here, I think you all realize, by accident. It is a great honor for me to be asked to introduce the first of our essayists this evening but while our essayist is one of the most distinguished specialists in the United States, I spent my entire medical career leaning over backwards not being a specialist and have been introduced as a cardiologist by accident, so that I apologize for that.

In Boston there is a great tradition of specialists who are not specialists in terms of an organ but in terms of the patient. The first of these in all your minds I am sure is Dr. Joslin who changed the entire situation of diabetes in terms of the doctor-patient relationship and showed how specially careful a specialist could be about each patient who came to him. When our first essayist tonight started out in his practice, Dr. Joslin's career was well

launched and what he was able to do in his field was quite clear to the doctors in his community, and Dr. White early decided he wanted to specialize in a field. He is a very modest person and so he picked the smallest field he could find. An organ that is not full of complexities like diabetes, which has no mucosa and has no epidermis. Just a piece of muscle with some flaps and he has spent his entire life helping patients who are concerned about this curious organ. He has told us this evening, what some of us knew before, that he was very much interested in getting the electrocardiogram of the largest living mammal, the whale. He has been interested in the electrocardiogram of the humming bird. He is interested in the hearts of all mammals and I suppose of all vertebrates but he is more interested than anything else in the patient. This is a great tradition that the Boston specialists have made so outstandingly unique in the history of the profession of medicine. For the specialists are not interested only in specialty or

* A lecture from notes and lantern slides recorded by tape from the Scientific Session, Medical Society of the County of Kings, Brooklyn, New York, January 17, 1956.

only in an organ, they are interested in patients.

Dr. White has told us that he is going out with a cross bow and various special guns to put electrodes in some whales off the coast of Mexico. But I am sure he won't be satisfied with this just as he wasn't satisfied with his earlier experiences in making electrocardiograms of somewhat smaller whales. Dr. White will never be satisfied until he has become an expert skin diver and has swum around and gotten on close social terms with these whales so that he can attach his electrodes to them without disturb-

ing them or wounding them so that with the whale's complete confidence in Dr. White we will have recorded the basal electrocardiogram of the happy and confident whale.

This evening he is going to talk to us on his experiences with a small vertebrate but among these small vertebrates that occupy these United States so increasingly these days Dr. White has as perhaps you have heard been called upon to see the whale among the genus homo and he will tell us about hearts, large and small, from the whale to the humming bird and from the President to the ordinary citizen.—Dr. White.

DR. PAUL DUDLEY WHITE: Thank you, Dr. Dock, Dr. Warren, Dr. Bauer, Ladies and Gentlemen:

Twice as I know and perhaps more often, I have addressed this Medical Society. I think the first time was at least 25 years ago. Then, by good luck, the Bell Telephone Company and some others of us conspired to reproduce in a particular meeting hall, most remarkably through a loud speaker, the most delicate heart murmurs. Having had that great success—it was just fortuitous, the room happened to be just the right shape, it was just filled to the right degree and the machines happened to be working well and the patients were just right—we were over-confident just as we have been in the past with the whale too, and the next time we tried to reproduce by loud speaker heart murmurs and heart sounds in the City of Washington in a very different hall, we had a dismal failure. That is what over-confidence can do. I have been here since and spoken of other subjects. I think one was concerned with our study of the young coronary cases.



William Dock, M.D.: "Dr. White has been interested in getting the electrocardiograph of the humming bird . . . the whale and all mammals . . . but he is more interested than anything else in the patient."



A portion of the auditorium as Dr. White addressed the Scientific Session of the Kings County Medical Society.

Tonight I thought you might be interested in hearing a bit of my plans, now that I am old enough to have had enough experience perhaps, to begin to think of the follow-up of my patients. But don't wait till you are my age to follow up your patients adequately. I have too many to follow up to feel at all confident that I can do a proper job. But I hope that sometime during the next few years I may be able to present in perhaps some form my personal experiences, not as a textbook, but as personal experiences in the form of chapters on the different types of heart disease. Before I do that, I might say that I'm really not very much of a specialist; I've become a general practitioner, in the subject of cardiovascular disease which was supposed to be very small when I started to study the subject 40 years ago, and to concentrate on this small field, which was much neglected.

One of my teachers, Richard Cabot, thought I was entering too small a field, that I would be in a very narrow sphere, concentrating on such a minute part of medicine, and I tell colleagues that then I must have had a little feeling of the future, that this wasn't always

going to be a small field. But I feel very guilty that while concentrating on this small field it has grown so big when I ought to have been doing the reverse. I ought to have been helping to make it smaller. Now that it has got to this enormous size, cardiovascular disease, it is a problem of public health today in this country, and we must do something more about it than in the past. Although we have been working hard we haven't accomplished much. So I want to admit my own incompetence in the past but affirm my keen desire to do more in the future. I hope that I may enlist many of my fellows in this work and attempt to cut down the size of this field which has grown so enormous. But while I have been concentrating on this field and while it has become so large it has divided itself up into specialities and I would like to think that I might have told Richard Cabot,

who gave me this warning, years ago, 36 or 37 years ago, when I really started in practice, that despite his feeling about the small size of the field that some day there would be specialists on just one heart valve; that has come true. I have tried to cover the whole field and so I'm really a general practitioner in cardiology.

I want to present this evening to you by lantern slide some aspects of my experience in these particular branches of cardiology, the different types of heart disease. Richard Cabot, I might add, was one of the great leaders in the effort to turn people's attention to causes of disease. He wrote a notable paper in 1914, two years after James Herrick of Chicago had invented coronary thrombosis in 1912. Two years later after Herrick's helpful paper, Richard Cabot wrote a paper on the four common causes of heart disease and said it was more important to determine the causes and to work on the causes than it was to diagnose the condition or even to treat it. That was in 1914. That is a long time ago but it is certainly true that it turned our attention to etiology and I have been more or less interested in that ever since and increasingly so because as one gets older one naturally, I think, turns more to prevention than just to diagnosis and treatment.

Well, some of these observations that I will make concern the natural history of disease before some of the special methods of treatment, some of the specific therapy that has come in to help us, medical and surgical. I am sure that there has been more advance in the last 40 years, certainly in the last 30 years, in the field of cardiovascular disease (I think that is right across

the board in all of medicine), than in all the centuries before. I was taught medicine in the dark ages and know not only that experience but the fact that my father who was a family doctor had to resort constantly to sugar pills. Half of his practice consisted, I think, in giving sugar pills, and we children used to play with those sugar pills which were in big bottles on the floor of his office at home when we played doctor. The important medicines were high up on the upper shelves but there weren't many important medicines. The sugar pill was very useful—just as a vitamin is in most cases today.

Now I would like to read an editorial that was recently published entitled *The Long Follow-Up*. This is from the



Paul Dudley White, M.D., Consultant in Medicine, Massachusetts General Hospital: "... The long follow-up is one of the most neglected of our research tools."

Journal of Chronic Diseases. I was asked to write something for this Journal and wrote the following which was published in the January issue of that publication.

"It is generally agreed that a vital part of the study of chronic disease is the long follow-up. Despite this obvious fact the long follow-up is one of the most neglected of our research tools. There are several reasons for this which need more adequate attention than has been realized. Commonly in the past and not rarely even now quite wrong or at least incomplete conclusions have resulted from a short term study of patients over periods of weeks or months or even a few years. No matter how elaborate the so-called vertical investigation, invaluable as much of the immediate though short term study of these has proved to be, many questions can be answered only by the long follow-up. For example, when coronary thrombosis first began to be commonly diagnosed in the mid-twenties (it wasn't till then that the diagnosis began to be made fairly commonly more than 10 years after Herrick's famous paper), it was generally believed and so stated that three years of survival after the attack might be possible with the best of good fortune, three years after acute coronary thrombosis if you were lucky. That was the comment and opinion in the 1920's, you will remember and as a result there was a fatalistic point of view and an attitude of pessimism about the disease.

"The common statement then was 'well my life is going to be so short, it might as well be a gay one' and often the gayety that was indulged in did shorten the life, and a gay and a short life seemed to corroborate the general

opinion and statement of the time. With each decade since there has developed an increasing optimism about the prognosis of this disease resulting simply from observation, and many patients who survive the original attack lead active lives for a long time, but there are many exceptions of course.

"An example of this change in viewpoint is a patient of mine whom I saw in consultation during an absolutely typical illness with acute myocardial infarction in 1927 at the age of 51 years. I saw him in consultation and there was no question at all about the diagnosis. By that time we were making the diagnosis easily. He is perfectly well today, 28 years later, despite a fair sized scar in his heart which does not prevent him from playing 18 holes of golf free of symptoms at the age of 79. Of course, he is one of the long survivors, but such is possible you see. The point of view in 1927 was such that had he been seen then at the age of 79 the correct diagnosis would have been ruled out, because he had survived so long and in such good health. It would have been inconceivable that he could have had this. At the present time the average age survival period after acute coronary thrombosis is not far from ten years but that is the average and includes all the bad cases as well as the good. This example is one of the more impressive results of the long follow-up, and the change of attitude about prognosis has changed our way of treatment, and, of course, advice.

"An exceedingly important reason why the long follow-up has been so often neglected in the past is that many of the professors of medicine in the medical schools of the country and

many of the clinical researchers are more or less peripatetic, progressing from one post and city to another as physicians of academically higher importance. Since these are the individuals who do most of the medical writing, the studies which they report are for the most part of relatively acute conditions or at best over a few years only so far as their own observations go and in impersonal public clinics. Practicing physicians who follow many private patients very carefully for many years in one locality are for the most part silent. It would be a great service to medical progress if the more carefully trained practicing physicians would keep good records, for they could present valuable long follow-up studies of their personal patients. We should all make a more concerted effort to bring this to pass. As everyone knows it is much easier and more productive to follow private patients, at least it has been in the past, no matter what their social and economic status, than to follow so-called public patients in the clinics, although there are, of course, exceptions.

"It is of importance to have expert advice from an unbiased statistician in planning complicated follow-up studies; his advice may wisely be requested in the beginning. However, it is to be emphasized that a relatively few cases studied well with accurate diagnosis and good follow-up are of much greater value than thousands of poorly diagnosed or inadequately studied cases despite the superficial impression that statistically the latter sound better.

"It is not an easy matter to conduct a follow-up study of many patients over periods of many years in a satisfactory manner. Too often councils, committees

and individuals responsible for the material or moral support of research have indiscriminately rejected application for funds for follow-up studies on the basis that they are a part of the routine care of patients. Perhaps they ought to be but they are not. Sometimes this is true or partly true, but often not. Much more careful appraisal of each application should be made than has been the custom in the past. The questions that should be asked in each case include the following: first, need of the follow-up, which of course varies greatly from case to case; second, the ability of the investigators; third, its magnitude and hence, its expense, and fourth, the possibility and indeed not rarely the probability that it cannot be done without outside support.



Dr. White: "... A patient ... with acute myocardial infarction in 1927 ... is perfectly well today, 28 years later."



On the dais, left to right: William Dock, M.D., Professor of Medicine; Edwin P. Maynard, M.D., Clinical Professor of Medicine; Robert F. Warren, M.D., Associate Professor and Director, Department of Orthopaedic Surgery; all at the State University, College of Medicine at N.Y.C.; Louis Bauer, M.D., Secretary, Treasurer, World Medical Association, United States Committee and Paul Dudley White, M.D.

"Finally a word or two may be helpfully added as to the technique of the long follow-up. It is well to introduce the idea to the patient on the occasion of first meeting him, even though at the moment there is no serious disease to be treated. In respect to intervals between re-examinations they may be long, even up to five years, although I have found that annual checkups are the most satisfactory in maintaining contact with the patients for a long follow-up unless they need much more attention. If one acts as a consultant he should be very conscientious in sending after each examination a full report to the family physician with copies as circumstances may dictate to the patient himself. Sometimes a patient has these letters which are very helpful in case he moves. If for one reason or another a number of years elapse and the patient moves away or dies there are various methods which may be used to trace him. The family doctor or some relative may have the needed information. If not, one may have to resort to the Departments of Vital Statistics in the state, or city or town where the patient once

resided. One may enter a note of inquiry in the local newspapers or even in the journals of a larger city whither the patient or some relative or friend may move. My colleagues and I have had some success with that procedure. Another method which has been fruitful is to search for the patient or some possible relative of the same name in a current annual telephone directory of the original city or town of residence or neighboring towns or nearest large city. Not infrequently the patient or his family may have moved to a nearby street or some other suburb of the same city. When letters fail a telephone call or personal visit may succeed.

"In summary then we make the hope that the value of the long term follow-up in medical research will be more widely recognized, effected and supported, particularly in establishing a base line of the natural history of various diseases for comparison with the effect of the many new medical and surgical therapeutic and preventive measures that are being constantly introduced. We can better judge the effect of treatment and prevention in coronary heart disease if

we recognize as is possible even now the extraordinarily varied natural course of the disease through decades of time. We can better appraise the result of sympathectomy and various hypotensive drugs if we know how hypertensive patients seem to do without such treatment and we can determine the ultimate effect of mitral valve surgery which promises so much benefit to us if we have adequate knowledge of the course of pure mitral stenosis before its surgical treatment became a practical routine."

With that introduction I would like to turn to the lantern slides right away and take up briefly the different types of heart disease.

Of course, we start, naturally, with congenital heart disease and something of what I have told you concerns the evolution of our diagnostic ability.

Let me have the first slide which gives some of the types of *congenital defects* and our first appreciation of them. I might add that my own private practice began in 1920, the 10th of January, 1920 or a little later, I think, and has continued ever since. My chief interest is still private practice because after all everything else, teaching, research, public health, all these activities, are based on the individual patient. So I like to think of myself primarily as a private practitioner of medicine with special interest in cardiovascular diseases.

Now here is my experience with my first 5000 cases, many of which were seen in consultation, most of them in consultation with the family doctor, but some I have carried myself if they didn't happen to have any family doctor; so some to all intents and purposes have constituted my own private family practice.

Patency of the ductus arteriosus was diagnosable back in 1920 and between 1920 and 1933 I made the diagnosis 25 times, 13 times in males and 12 times in females, aged 1 year to 64 years. From 1933 to 1946 in the next 5,000 patients the diagnosis was made 32 times with a great deal of sex difference, females being more common than males, and then in the period up to 1954 in 36 cases, more commonly diagnosed because more patients were seen with a view to find out if surgical treatment were indicated. That gives a total of 93 cases in 63 females and 30 males in my own experience with the average age in the twenties but with a range from about a year to 64 when the diagnosis was first appreciated. A woman who was seen by me had not had a diagnosis of patency of the ductus arteriosus made prior to that time when she was 64 years old.

Which reminds me of a patient I saw in the clinic this morning at the Massachusetts General Hospital (I have a teaching clinic every Tuesday morning). Two of my patients were long term follow-up patients, one, a woman I might speak of now because I am not going to discuss disorders of the rhythm. She was number 4 in my list of patients back in 1920 and she had at that time complete heart block at the age of 24. Now 36 years later, when I examined her this morning, she was in good health with the same complete heart block which she had in 1920, in fact it was first recognized by electrocardiogram in 1916, so it is about forty years during which she has been known to have had complete heart block. She has been quite well except for neurocirculatory asthenia. That is my chief diagnosis, neurocirculatory

asthenia, which still bothers her on occasion but she happens to have complete heart block too. It hasn't hurt her at all. I found her in quite good health so far as her heart was concerned today. Her heart block may have been congenital or may have come from diphtheria at the age of a year and a half. That is in reference to disorders of rhythm.

Well-borne patency of the ductus arteriosus is represented in one of my older patients but it is rare that one sees an older case like this followed for so long. A man 79 years old whom I presented to my group this morning, was first seen by me at the age of 43 because on being examined for life insurance for which he applied for a larger sum than he had had before, the examiner listened not only at the apex of the heart but also at the base, since the amount of the policy was much larger. A murmur was found and he was frightened on being told that he had an important murmur. He had great fear of impending death when he learned about this murmur. He came to me and I found that the murmur was due to a patent ductus arteriosus, a continuous murmur in the pulmonary artery area. He showed the same murmur this morning, now 31 years later; he is now 79, still carrying on very actively a big business and walking a few miles a day, with no heart symptoms at any time in these 31 years despite the presence of a patent ductus arteriosus. I think if he were 50 years younger we would operate on him, but he has gotten away with it very nicely in spite of much strain, physical, mental and from many illnesses. He has had his gall-bladder out, his prostate out, he has had pneumonia and yet he has weather-

ed all this and is still well despite the patent ductus arteriosus at the age of 79. He is my prize patient, you might say, with this condition, but there are others who have done fairly well at advanced ages. Nevertheless, this doesn't alter the advice I think we should all give, to perform surgical correction in youth.

Instances of ventricular septal defects were, diagnosable from that early time. The small defects have allowed considerable longevity; large high ventricular defects that may involve the valve would not fall into this particular category. Here, you see, there were 62 patients with an even ratio between male and female.

Atrial septal defects we didn't diagnose before 1933. I don't have the exact date when an atrial defect was diagnosed except the fact that it was made after 1933. We had none diagnosed in the first 5000 cases. Suddenly, we became aware of this anomaly, a congenital defect, and saw 32 cases in the next 5000 patients, again evenly divided between male and female and varying in age from two months to 54 years when the diagnosis was first made. Then in the more recent cases a patient 69 years old was found to have an atrial septal defect; the average age was about 25. Now that defect is beginning to be corrected but not yet adequately. Many of these patients should have the operation done eventually but it is still too early to advise routine correction.

Coarctation of the aorta was diagnosed by myself only in the first period, first 5000 cases, just at the end of that period, in the early 1930's. That was a male, 23 years old, with coarctation of the aorta. Then in the next series

there were 12 cases, and 13 in the next 1500 cases. This is of course quite common now and in general correctable in most of these cases who are fairly young.

The tetralogy of Fallot comes next. We were making the diagnosis back in the 1920's. There were six cases in that original group. The oldest patient was 55 years old. That is a world record case. He lived to be nearly 60. He still holds the world's record, I am quite sure. He was a notable figure in music and had been blue since infancy. In fact his family had been advised by the doctor not to spend any money on his education, that he wouldn't grow up, but he made quite a notable career for himself. There were a total of 26 cases in that particular series with an average age of 14 years.

Pulmonary stenosis—We were making a diagnosis of pulmonary stenosis (now much more commonly made) without cyanosis even in the period of the first 5000 cases, but some of these should probably have been included in the series of the tetralogy of Fallot.

Congenital aortic stenosis we didn't realize possible in that first decade or more; we became aware of subaortic stenosis in the next period from 1933 on and now it is not rarely diagnosed. Undoubtedly some of the patients who were thought to have rheumatic aortic stenosis or even perhaps calcific aortic stenosis probably actually have had congenital defects that have been called something else. We need much further study of that point.

Then there were a few cases of coronary anomalies and of arachnodactylia.

The next few slides are from Dr. Bland and Dr. Jones who followed up 1000 patients with *rheumatic heart*

disease. Some of you may have seen these charts before. These were the original cases, followed from 1921 to 1951 with a minimum of 20 years of observation. At the start there was an average age of eight years; two-thirds had rheumatic heart disease and one-third were called potential. Ten years later 202 of them had died. They were then averaging 18 years of age, but there were now more cases of rheumatic heart disease; we have a few more up to 475. Twenty years later with the average age of 28 years, 301 had died, that is 30% were dead; only 5 had been lost in the 20 year follow-up, only 5 out of the 1000.

Here is the cause of death in the 301 cases of the 20 year follow-up study. Now, by the way, a number of us are tracing our patients with mitral stenosis who were seen before the day of surgery. Just a few days ago I saw my case number 6 in private practice when in 1920 she had mitral stenosis and neurocirculatory asthenia. Symptoms then were due mostly to her neurosis. It was really a combination of symptoms which we labeled neurocirculatory asthenia and she still has neurocirculatory asthenia though she is now 70 years old. She finally developed fibrillation about ten years ago and she began to have heart failure three years ago. She is still alive at 70, 35 years after I first saw her. She is an illustration then of a patient who has done reasonably well all these years and yet might have come to surgery 20 years ago. The majority of these patients, according to the analysis of Dr. Bland and Dr. Jones, died of rheumatic fever associated with congestive failure, 231 of them. Ten per cent died from bacterial endocarditis, seen especially as

you know in the old days before the introduction of antibiotic therapy for bacterial endocarditis, and there were a few other causes, 10%, of cerebral embolism, sudden unexpected death, unrelated disease or accident, and then 10 deaths from unrelated disease or accident.

Here are some of the special features; if the heart was greatly enlarged the mortality was 80% in ten years, 81% in twenty years. If congestive failure, there was a mortality of 71% in 10 years and 80% in 20 years, and yet some recovered; pericarditis increased the hazard, with a mortality of 56% in 10 years and 63% in 20. Nodules were much less important, arthritis less, and chorea least.

Now follows an interesting result of long study. There is a delayed appearance of rheumatic heart disease in some of those patients who were thought to be potential. Twenty years later of the 347 potential cases, 154 were found to have rheumatic heart disease. While more interesting still was the regression of rheumatic heart disease. Among rheumatic heart disease patients, 653 with a definite diagnosis in the beginning showed 20 years later that 180 had become potential. They lost evidence of their rheumatic heart disease. The dilatation of the heart in the acute stage subsided and murmurs, even including the mitral diastolic which at first had been interpreted as meaning mitral stenosis, had cleared up. There was less rheumatic heart disease in 99 cases. Now that improvement you see is really before the days of the antibiotics and special protection. But I might add that long before special measures there has been evidence of a decreasing amount of rheumatic heart

disease and rheumatic fever, which some of us think may have been due to the improvement of living conditions. It is said that the prevalence of tuberculosis and rheumatic fever varies with the status of the development of civilization, way of life, and the living conditions of any particular part of the world. Therefore, where living conditions are poor you are likely to find more tuberculosis, more infections of all sorts, including that due to the hemolytic streptococcus, and rheumatic heart disease. And so, by the 1930's it was already evident that rheumatic fever and rheumatic heart disease were on the down grade in this country and that has continued, and is progressing still. We can be hopeful that the natural history of this disease associated with hemolytic streptococcus infection history is that of a decrease in the infection and therefore a decrease in the amount of rheumatic heart disease. This may not be due wholly to improvement in living conditions but may be due to a change in the disease itself. We have no proof one way or the other on that.

Then we come to what is so well known and needs nothing more perhaps than this slide showing the change that has come with the introduction of the antibiotics in *subacute bacterial endocarditis*, a sharp change in 1944 from an almost 100% mortality, after a very little drop under the sulfonamides, to a sharp drop in 1944 and then a drop still further to about a 20% plus mortality in 1951. The problem still remains and that may be partly due to the multiplicity of infecting agents that may be more difficult to control than the *Streptococcus viridans*. Also it is possible that there may be some change in the reactivity of the

whole system so that we may still have quite a battle on our hands in a good many cases of subacute bacterial endocarditis, but there is one very hopeful element in all this and that is that with the decrease of rheumatic heart disease there is bound to be a decrease of subacute bacterial endocarditis. The chief lesions on which subacute bacterial endocarditis is superimposed are those of rheumatic heart disease and congenital defects. Of course we should also add that the main problem in congenital heart disease is not in the diagnosis or in the spectacular surgical treatment but in the further study of etiological factors in order to try to reduce the prevalence of congenital heart disease.

In the case of subacute bacterial endocarditis, many in this room will remember how we dreaded to see a new case of bacterial endocarditis, before 1945, shall we say, because we knew that the situation was hopeless even though the patient might seem fairly comfortable for several months. I used to watch patients in those years live for about six months, which was about the average, and for several months they were quite comfortable but with a fatal outlook in almost every case.

There is soon to be published our up to date experience with *chronic constrictive pericarditis* which is probably dependent on tuberculosis and as we wipe out tuberculosis in the future, we are probably going to have less and less chronic constrictive pericarditis. Here is our experience in 78 cases from 1925 to 1950. There were 59 males and 19 females. It is a male disease primarily in our experience. In one case the onset occurred at about one and one-half

years of age. It was acute pericarditis at the age of one and one-half; the operation in that youngster was done at the age of 12; the diagnosis was wrong at first and an abdominal operation was carried out at the age of 5. We saw the patient first at the age of 10. She had a very much swollen liver with ascites but she has been perfectly well since the operation was done at the age of 12 which was a good many years ago. Now there is also the first successful case done in this country, by Dr. Churchill in 1928 at the Massachusetts General Hospital; she is perfectly well today after she had been bedridden for three years at the age of 19. She was edematous, her ascites had to be tapped and she seemed to have a very miserable future; that was in 1928. I've seen her recently. She is perfectly well today and has a family. She is astonishingly healthy. She still, by the way, shows a very slight increase in the jugular pulse. We can still see the jugular pulse very slightly just above the clavicle on the right which means that the venous pressure isn't perfectly normal. But clinically she has been perfectly well.

Then there was a scattering of cases you see right down into the fifties. So far as we could tell, in some patients their infection became evident in the 40's and 50's. So it isn't always a childhood disease or disease of young adults.

The next slide shows the results of surgical treatment; since 1928 of the 78 cases, 63 had been operated upon with excellent results in half, i.e. 32; fair results in 14; one case had to be reoperated upon and died at the time of the second operation; not improved in 5; operative deaths in 7; complicating diseases in 6. One patient who did obtain fair results for 11 years, needed a sec-

ond operation and died at the time but very few have had a recurrence of trouble. The surgical treatment is now improved; we try at first to decorticate the left chambers before clearing the right chambers. But we do hope that with the more marked control of tuberculosis we may have less and less of this disease. We still see a few cases a year.

Those who were not surgically treated included 15 cases. One who died prior to 1928 I remember tapping repeatedly every few months for years. Two cases were too mild for operation and they lived for a long time quite comfortably. Eight cases were too ill and one patient refused operation. Two were not diagnosed but were found at autopsy, and one was operated upon elsewhere but we followed that particular patient too. This, of course, would be one of the chapters of this book of experience, dependent on the tuberculous type of cardiovascular disease.

Here is another very interesting subject, *pulmonary embolism*, and I show this slide which is quite old now since it still has an important relationship to our present experience. We found, back in the 1930s and in the 1940s, that pulmonary embolism was twice as common among medical patients, that is in the medical wards at the Massachusetts General Hospital, as in the surgical wards, to our surprise, giving us a different result from what had been suspected before. This condition, confirmed at autopsy in many patients, was found chiefly in our cardiac cases who had been bedridden for a long time and who were in congestive failure. They didn't die just of their congestive failure; many of them were cleared of the congestive failure, but eventually they did die of pulmonary embolism as the

most common complication which was fatal. Now despite the use of anticoagulants, despite the surgical therapy of veins, we find that pulmonary embolism is still with us and recently Dr. Castleman, our pathologist, has reported that it is still a considerable problem, much to the concern of all the people using preventive measures. I personally think that that is due, in part at least, to several factors, one of which is the longer life of our cardiac patients for by the newer methods of treatment of congestive heart failure we have kept patients living a good many years longer than they used to live. They continue an improved existence often, with little or no edema but they eventually die. They die dry instead of with dropsy and when they do, they are likely to die from the embolism. In other words, the risk is still there no matter what we do, that is from the medical side. As to the surgical side, I think surgical experience helps to explain the persistence of a good deal of the threat of pulmonary embolism because our surgeons have become so skillful, our anesthesia has improved so much and more old patients come into our hospitals, so that older and older patients run the risks of serious surgery, often very beneficial but with an increasing risk of pulmonary embolism in these old patients. I think, therefore, that the improvement in our techniques, both medical and surgical, may be partly responsible for the persistence of such a condition as pulmonary embolism. It is still a threat to our medical and surgical patients.

The next slide presents *hypertension* and *hypertensive heart disease*. I would like to preface my remarks about hypertension by saying that probably 80 to 90 per cent of my patients who have hyper-

tension (by that definition I would say with a systolic pressure of 160 or more persistently and a diastolic pressure over 90, either one or both) do very well often for many years without any radical treatment. They just need common sense therapy, reduction of weight if they are overweight, some cutting down of tensions, omission of tobacco, a change in their way of life, some mild drugs, and some of the newer drugs that are mild can help. Some patients, as many of you very well know, especially women who have hypertension of moderate degree, say 200 systolic, 100 diastolic in the doctor's office and less at home, live for twenty years without any heart disease problem. But there is a group, usually male, of young to middle age, say 35 to 50, with high diastolic pressures and usually some evidence already of involvement of either the heart or kidneys or brain, especially the heart, who need one of the radical measures of treatment. There are three available and they have come in the last decade or two; they include the rice diet, of course, a very low sodium diet which has saved some lives but is very difficult to maintain, sympathectomy introduced in the early 1940's, and the more vigorously acting hypotensive drugs. No doubt all these measures have been helpful as radical treatment of serious cases.

I still find that sympathectomy has a place, particularly in these young and middle aged males who have some heart involvement, as proved by examination and sometimes by symptoms, whose diastolic pressures are very high and whose kidney function is fairly good. I reported some years ago a series of 100 cases of my own, 50 treated by lumbodorsal sympathectomy ten years

or more ago; now here is a new follow-up, with 50 controlled cases treated medically, about the same number of males and females in the same age groups. These were all serious cases, with at least one cardiovascular complication. Of those treated surgically between 1941 and 1946 by Dr. Smithwick, 50—38 were male and 12 were female—25 were living at the time of this follow-up not long ago with an average duration of life of 10.5 years since the first complication; 25 have died. But only one of the control cases was living 15 years after the first complication; 49 were dead. Cardiovascular causes were responsible naturally for the majority of the deaths. There were a few who died of other causes and the length of life after the first complication is shown at the bottom of the slide.

The next slide shows some of the individual cases, the most recent; here are 20 cases in good health of the 25 still living ten years later but you see that some of them have had a return of some hypertension after a drop in pressure first. However they had a drop for enough years to help them out and some of them still have normal pressures. Number 2, 3, and 4 have pressures of 150, 140, and 150 systolic and 90 diastolic compared to much higher pressures before and they have survived nine to twelve years. But there's one pressure that is very high, number 9, but there was a considerable drop at first and then a return of hypertension. One of the important points is that now these sympathectomized cases can be helped better than before by the other measures, namely the low sodium diet or the hypotensive drugs.

The next slide shows the last 5 cases,

4 in fair health and 1 in poor health. Some of their pressures were good and some not. Here then is the follow-up of ten to twelve years which confirms an impression that I have had for a long time that, especially in those patients who have evidence of cardiac involvement and high diastolic pressure, males young and middle aged, sympathectomy is probably the best and easiest method of therapy in the long run. Moreover the operation can now be done in one stage instead of two. Hence I am still sending to Dr. Smithwick several patients of my own every year.

Here is one of our star cases and I've shown this slide before. This man was operated upon in 1944 after we treated him for severe congestive failure. At that time his average pressure was 220 systolic and 130 diastolic. He was a middle aged man, 49 years old at that time, and it seemed unlikely that he would be suitable for operation. His heart was large and dilated, and he was in failure. After treatment of the failure, we had the second x-ray film which showed some reduction in the heart size with no longer any failure. Dr. Smithwick was willing to operate on him and the next slide shows the result. The heart was essentially normal in size a year and one-half after the operation and he remains quite well now in 1956 with the pressure a little elevated, but he has been saved I'm sure ten years and he has been reasonably active.

Now we come to *coronary heart disease*. We must of course make many more studies, that is follow-ups of coronary heart disease. One of these experiences of all of us is the increasing amount of coronary heart disease among the total cardinals. It has increased in my own experience to about double

in proportion among the cardinals so that it is now the most common type; you might say that it is due to the fact that I see, naturally, older patients, not so many children. Well, that may be part of the answer but I still see a good many children with congenital defects, rheumatic heart disease and other types. The more interesting point is at the bottom of the slide, the ratio of cases seen in private practice to those seen in the hospital ward. In 1925, the ratio was 6:1; in 1950, 2:1. Now that may be due to the fact that the wards now contain patients who are not so poor as those originally seen in 1925, but I think it has a wider significance than that. I believe that the ratio might now be almost 1:1, because coronary heart disease has swept throughout the country. Studies that have recently been carried out in Chicago show that the laborers have as much coronary heart disease as the business and professional people of Chicago which was almost certainly not true a generation ago. Their way of life has changed and just what factor is responsible we have to find out.

The first case of coronary thrombosis that I myself diagnosed was on January 13, 1921. I made no such diagnosis in 1920. I was taught nothing about the disease in medical school or in my early days in the hospital. Although Herrick published his classical paper nearly ten years earlier in 1912 I think I was one of the first locally or even in Chicago to make the diagnosis. My first patient, confirmed by electrocardiogram and by his death from pulmonary edema a few days later, was the first patient I saw in consultation with my father. My father waited a few years to see if I showed any deepened interest in the sub-

ject of heart disease and finally he called me in consultation. That first patient that I saw of his had coronary thrombosis and unhappily died. I don't remember, when I was called again. During 1921 and 1922 there were 9 cases that I definitely diagnosed as such, questionably in 5. I have picked out three years—1925, 1935 and 1945—and find an increase in the ratio from 6 per cent of my total cases labeled coronary thrombosis in 1925 to 15 per cent in 1935 and to over 20 per cent in 1945. There was only one male under the age of 40 in 1925; there were 3 under the age of 40 in 1945. This was a very small experience, but it is much like that of a good many others. The male, you see, was always preponderantly represented. There were also many cases of angina pectoris.

In 200 cases that Dr. Bland and I reported of coronary thrombosis in 1931 there was an immediate mortality of 33—19 per cent. The subsequent course of the remaining 162 cases during the next ten years showed 31 per cent surviving and 69 per cent who died.

The next slide is more important because it takes up those who had a complete recovery from their acute attack, 55 cases in all. Those who were limited by angina pectoris after the attack comprised 63 cases or 39 per cent and those who were limited by dyspnea were 44 cases. Of those 55 cases who had a complete recovery 24 patients succumbed in ten years, while 31 survived the ten years. In those who did die, the cause of death was coronary insufficiency or myocardial infarction in 18, one died in congestive failure, there were 3 non-cardiac causes of death and 2 died of unknown causes; 31, over

half, of those 55 cases were still living in more than ten years after they were first taken sick between 1920 and 1930. That was our follow-up report in 1941 and now we are making our more or less final follow-up study during which we have found 3 cases still alive in 1956.

Now we come to 173 patients with *neurocirculatory asthenia* with a twenty year follow-up. Some of these patients we are still in touch with and of the 173, we located 171—2 were not found—of those only 18 had died which is a very unusual low figure, lower than we expected. In other words, neurocirculatory asthenia seems to protect or favor longevity, which is always encouraging to the patients as I talk to them, although at the same time they would like to be more comfortable. There was an improvement in over half in our follow-up study of the surviving 153; there was an improvement and the condition was good with, as a rule, fewer symptoms; that's probably because the patients have learned to live with this condition for which we have no specific therapy. There was a fair condition in 32 per cent, while 7 per cent were still considerably handicapped after all these years by the disease. Only 6 cases of the 18 who had died had a statement on their death certificate of any heart disease. There were, I think, 2 hypertensives and a couple of coronary cases and one was rheumatic. Other causes of death included pneumonia, accidents, and cerebral vascular disease. I think that's the last slide. May I have the lights.

I forgot to mention the fact that in the course of our study of pulmonary embolism, we have found on occasion such a severe degree of massive pulmonary embolism that we have uncov-

ered in the course of time what we call the acute cor pulmonale. We have had some patients with the acute cor pulmonale who recovered completely and are well today.

I hope that what I have said about the importance and the interest and the need for the long follow-up may have stimulated some of you here who are not necessarily specialists but who have a considerable experience to begin to look over your own cases to follow them up because there are possibilities, even in individual patients, of important information which can be passed on to others and I shall be interested not just to present my own experience in such a collection as I have referred to as the beginning of a follow-up study in the course of the next few years, but to introduce also the experience of some of the rest of you.

Thank you very much for your kind attention to me (applause).

DR. WARREN: Thank you very much, Dr. White. The discussion will be by Dr. Maynard, Clinical Professor of Medicine, State University of New York.

DR. MAYNARD: Dr. White, Dr. Warren, Members of the Society: When Dr. Warren and I invited Dr. White to come and speak to our Society, we thought together about a topic. We realized that a man of his experience can have a lot to give to such an audience as ours, so we asked him to talk about experiences in the management of the heart. But I can say now that his invitation came before he was invited to take care of our President, so that our title and our request for a talk about experiences in management of diseases of the heart had no political implications whatsoever. We are delighted that



Edwin P. Maynard, M.D.: "... follow them all from the beginning ... and your prognoses become better ... because the length of life of those still alive improves the picture."

you came and talked to us about this subject. As I listened to him tonight, there were many things that I thought that we as practicing physicians should take away with us and remember. I thought it would be interesting to repeat a few of the things that I'm going to remember myself.

In the first place, it was interesting to see as he pointed out that there has been a natural decline or some type of decline, natural or not, in the instance of rheumatic heart disease even before we had our antibiotics, just as there was a decline in the instance of tuberculosis before we had any effectual control of tuberculosis. That makes us a little bit humble. But now we have real measures

to lessen the incidence of rheumatic heart disease by our preventive program which has been outlined by the American Heart Association, so we want all of us to become interested in this program and to do everything we can in our patients to prevent the severe results of the hemolytic streptococcus infection in sore throat. We will want to enter into the penicillin prophylactic program of patients with rheumatic heart disease so that recurrences of rheumatic fever will be greatly diminished. Then also, we have to take another warning that he has given us—the prevention of subacute bacterial endocarditis. Now, with penicillin we must remember that everytime we have a patient who has rheumatic heart disease and who is going to have a tooth extraction or who is going to have any type of operation, particularly about the nose and throat, we must see to it that they are protected before, during and after the operation, so that our incidence of subacute bacterial endocarditis will be greatly reduced.

Another thing I think we have to think about—Dr. White's work in Boston and what made it clear is the diagnosis of constrictive pericarditis. I wonder how many of those patients I have missed myself and I am sure that it is a disease many of us don't think of often enough and that we must bear in mind because the results of correct diagnosis and proper treatment are so good.

Then, I was interested that Dr. White finds pulmonary embolism still a problem in spite of our methods of prevention. That has been our experience here, too, that even in patients in whom we are deliberately trying to prevent an embolism when we have them well under anticoagulant therapy and ambu-

lating them, I can think of some that have had an embolus right while they were under what we thought was good control. So we need to know a lot more about the prevention of pulmonary embolism.

Then as to the prognosis and management of hypertension—Dr. White mentioned a very important point; we really shouldn't think about treating systolic hypertension at all. Just because a patient has a systolic blood pressure of 200 doesn't mean they need any treatment provided their diastolic pressure is 80 or 90. That's natural as age advances and the aorta hardens. Systolic tension is a natural accompaniment and has no serious consequences so there is no need in using blood pressure lowering drugs in patients who have simple systolic hypertension. But our attention should be fixed upon the diastolic; as it gradually goes up under observation we have to decide what measures we are going to use. And it is certainly true that sympathectomy is effectual. It has been in some patients of mine and I saw one last week that exemplifies some things that Dr. White spoke of; she had excellent results from an operation by Dr. Smithwick, but now the diastolic pressure is going up again, eleven years after the operation. We have to decide what we are going to do about that and we are trying to use the antihypertensive drugs. We used Apresoline in the procedure to get what apparently is an arthritis, so we're probably not going to be able to use that. So, the important point is to treat the diastolic blood pressure and not make invalids out of people with simple systolic hypertension. So you see with a man of Dr. White's experience over all these years, the prognosis looks better.

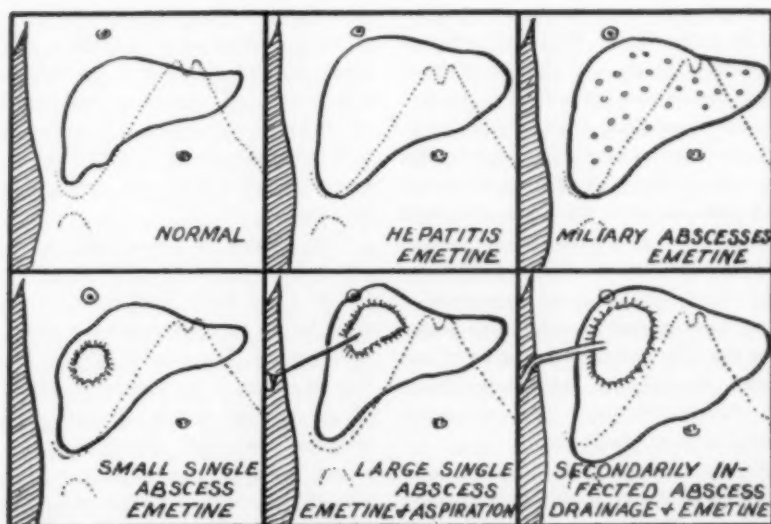
Take coronary disease—in order to decide the outlook in a group of patients with coronary disease, it is necessary to follow them all from the beginning until the whole group is dead, and then if you do that your prognosis becomes better and better because the length of life of those still alive improves the picture. None of us will live long enough probably to follow that type of research

problem, but nevertheless, as Dr. White has pointed out, the more experience we have and the longer we follow these patients, the better the outlook.

So, I think it has been very good for us all that he has brought a sound point of view and an encouraging point of view about the outlook in diseases of the heart.

264 Beacon Street (Dr. White)

Clini-Clipping



Stages of liver involvement in amebic dysentery and treatment (according to Napier).

Kidney Function in Health and Disease

This summarization attempts to cover the essential information on the subject and is designed as a time-saving refresher for the busy practitioner.

Water constitutes about 70% of the body weight and of the approximately 45 L. of water in the adult body, 30 L. are enclosed in the cells as intracellular fluid and 15 L. are the extracellular fluid. The contents of the extracellular fluid must be stable if normal cellular function is to continue, since changes in the extracellular fluid are reflected in changes in the cell fluid and functions. The extracellular fluid is divided into the interstitial fluid, about 10 L. and the blood plasma, about 2-3 L. The two subdivisions of the extracellular fluid are identical in their chemical composition except for their protein content. The extracellular fluid provides for the exchange and transport of water and substances soluble in water from the cells and the circulation of the plasma through the kidneys facilitates the removal of water and excretable solutes from the body fluid.

The internal environment of the body is regulated in large part by two pairs of organs. The lungs control the levels of oxygen and carbon dioxide and the kidneys govern the concentration of

other important constituents of the body and most foreign substances. Kidney function is not merely a process of metabolic waste removal but the kidneys also regulate the chemical homeostasis of the body fluid. The regulation of the internal environment by the kidneys involves three processes; (1) removal by filtration of a portion of the blood plasma water with its dissolved substances; (2) selective reabsorption of whatever is needed to maintain the internal environment and (3) secretory excretion of waste and foreign substances.¹

The volume of blood that must be exposed to the kidneys is large since the 45 L. of body fluid must be regulated by the rapid alteration of only 2-3 L. of plasma. The volume of renal blood flow is about 1 L./minute or 20-25% of the cardiac output, so that in five minutes the total blood volume is passed through the renal circulation. The kidneys only constitute about 0.5% of the total body weight and passage through them of a large amount of blood necessitates a very direct and pro-

fuse system of arterial, capillary and venous channels. The renal arteries spring directly from the abdominal aorta and then each renal artery divides into an anterior and a posterior branch and each primary branch subdivides to form the interlobar arteries which divide to form the looped arcuate arteries, which in turn give rise to interlobular arteries. The interlobular arteries end in the afferent arterioles which are short terminal vessels, each of which enters a glomerulus. The arcuate arteries lie at the boundary between renal cortex and medulla and more than 90% of the renal blood flow is directed out into the cortex. A small fraction of the arterial flow is diverted to nourish supporting and nonexcretory tissues in the cortex, medulla, capsule and pelvis.

The current concepts of renal physiology indicate that urine is elaborated from a filtrate of plasma by the direct activity of renal tubular cells.² Physical separation of the formed elements and macromolecules from the water and solutes of the blood takes place by filtration across the glomerular capillary membrane under the hydrostatic pressure of the blood. The filtrate thus formed pours down the tubules where most of it is reabsorbed and returns to the circulation. The remainder is transformed by selective reabsorption and excretion of solutes and water before it appears in the bladder as urine. The composition of the urine reflects the processes to which the filtrate has been subjected on its way to the bladder and abnormal function at different stages may be discerned in studies of urinary excretion.

Urine function begins as the blood enters the nephron. About one million nephrons³ are in each kidney and the

excretion is carried out by a summation of similar functions of each of these qualitatively identical structures. Each nephron is composed of a vascular portion, the glomerulus with its arterioles, and an epithelial portion, the tubule. The afferent arteriole, as it becomes enclosed in Bowman's capsule, loses its spiraled coat of smooth muscle and myo-epitheloid cells and rapidly divides into the coiled loops of capillaries that form the glomerular tuft. The capillaries then regroup to form the efferent arteriole. This arrangement is mechanically ideal for the outward filtration from plasma of water and substances dissolved in water. Blood entering the afferent arterioles is spread over a large area of thin-walled capillary and then leaves by a smaller vessel, the efferent arteriole. The capillary loops are enclosed by the thinned out, expanded end of the tubule, Bowman's capsule, and the fluid that filters through the double coat of capillary endothelium and capsular epithelium can only leave through the tubule. The arrangement of the arterioles on either side of the capillaries permits delicate and exact adjustments of pressure within the capillaries and of blood flow through them by the regulated interplay of constriction in one arteriole and appropriate relaxation of the other.

Filtration occurs because the hydrostatic pressure transmitted through the blood from the heart to the capillaries exceeds the osmotic pressure of the plasma protein. About 70% of aortic pressure reaches the glomerulus and the capillaries of the glomerulus are unique in that they can sustain a pressure of 75 mm. Hg while capillaries elsewhere in the body can withstand a pressure of only 25-30 mm. Hg. The positive pres-

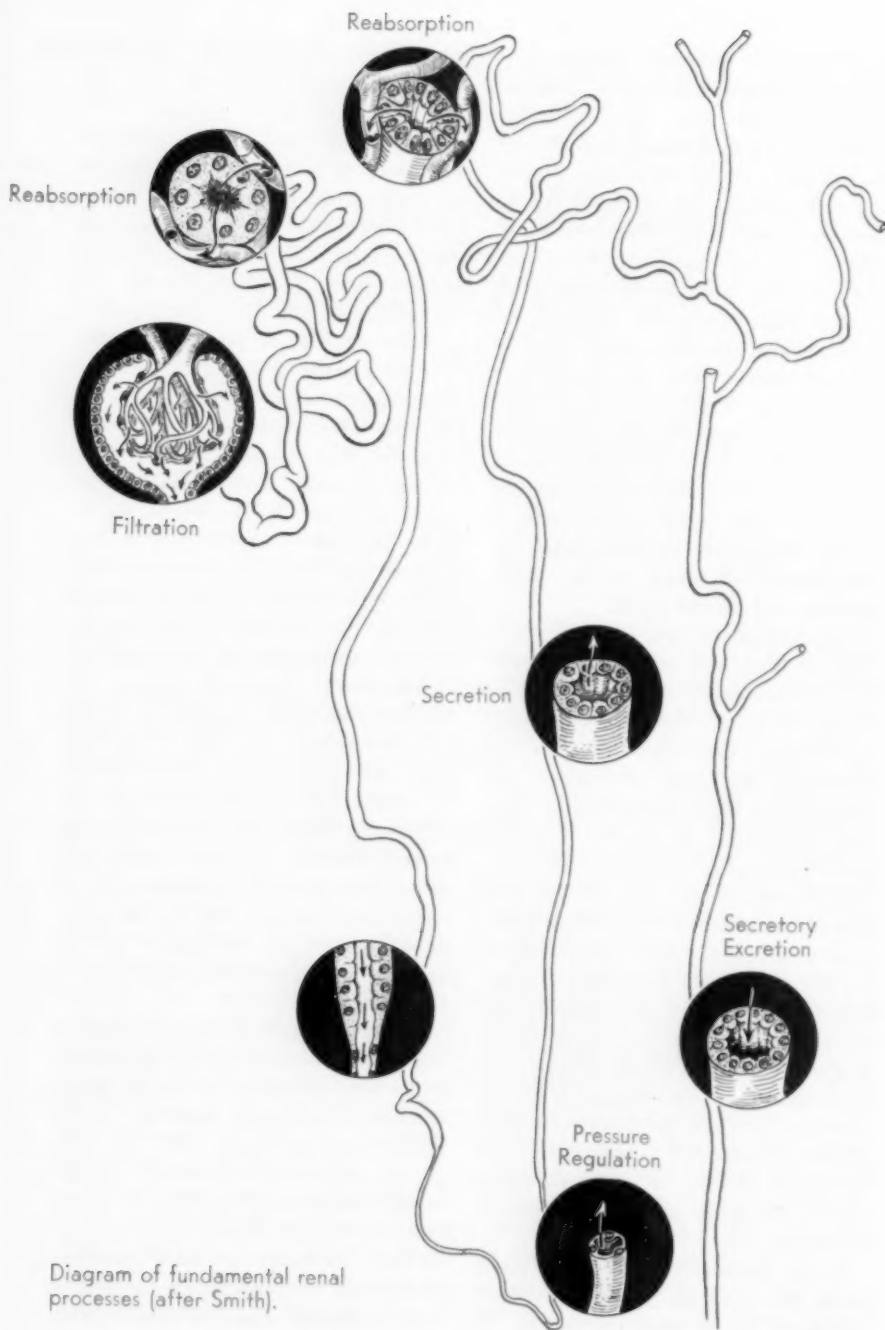


Diagram of fundamental renal processes (after Smith).

sure of 75 mm. Hg within the capillaries tends to force water out of the plasma. The pressures that tend to prevent filtration are (1) the osmotic pressure of the plasma proteins, about 30 mm. Hg; (2) the interstitial pressure, which presses on the capillaries to the extent of about 10 mm. Hg⁴ and (3) the pressure necessary to move the fluid down the length of the renal tubules, through the collecting ducts and into the bladder, about 10 mm. Hg. The net effective filtration pressure is 75 mm. Hg = 50 mm. Hg for a total of 25 mm. Hg. The filtration rate is normally regulated by the hydrostatic pressure of the blood and the blood flow through the glomeruli.

The different portions of the tubule perform different functions.⁵ The proximal tubule is concerned with the obligatory reabsorption of glucose, electrolytes and water.⁶ By active reabsorption the proximal tubule reabsorbs four-fifths of the normal filtered load of Na^+ and attendant Cl^- , K^+ , glucose and small proteins, and by passive reabsorption, 80-88% of the water and urea. The function of the thin segment and the loop of Henle is not clear but it has been proposed that its purpose is to permit attainment of osmotic equilibrium by passive back diffusion of water following reabsorption of most of the osmotically active substances in the proximal tubule.⁷ In the distal convoluted tubule, mechanisms exist for the separate control of water and salt reabsorption. By active facultative reabsorption, the distal tubule reabsorbs all but 1% of the filtered water, one-fifth of the normal filtered load of Na^+ and Cl^- , excretes inorganic K^+ and synthesizes ammonia. The antidiuretic hormone of the posterior pituitary normally

regulates the rate of tubular reabsorption.^{8,9} Sodium and potassium reabsorption in the distal tubule is under the control of the adrenal cortex. The tubular processes of reabsorption and secretion involve the performance of osmotic work.¹⁰ The reabsorption of many substances is at a limited rate per unit of time. The transport systems are not well understood but evidence is accumulating that they are specific enzyme functions.¹¹

The renal tubes also have the task of regulating the balance between acidic and basic substances in the body.¹² Body pH is dependent on a constant ratio of one part carbonic acid to 20 parts bicarbonate in the plasma. The lungs control carbonic acid concentration by varying ventilation. The kidneys stabilize the concentration of the bicarbonate. This involves the salvaging of all, or nearly all, of the bicarbonate contained in the glomerular filtrate and the neutralization of nonvolatile acids, including sulfuric acid and phosphoric acid. The kidney may conserve base by conversion of neutral to acid salts and by the synthesis of ammonia. Synthesis of ammonia is a function of the distal tubule, glutamine being the principal precursor.¹³

In addition to their excretory functions, the kidneys are capable of exercising an endocrine function.¹⁴ There is a renal pressor system which may or may not play a part in the regulation of blood pressure under normal conditions. The renal pressor becomes active, with liberation of renin and formation of angiotonin, when renal circulation is impaired. Renin substrate, also known as hypertensinogen, is an α_2 globulin which is produced in the liver and which is constantly circulating in the

blood under normal conditions. Renin is a proteolytic enzyme distinguished by an extraordinary specificity in regard to the substrate which it attacks. Renin is formed in the tubule cells and is released in increased amounts when renal circulation is disturbed. Renin acts on renin substrate to form the pressor substance angiotonin, or hypertensin, which acts directly on the cardiovascular system and causes the heart to beat more forcefully and the arterioles to constrict causing hypertension. The normal kidney contains, in greater degree than other tissues, proteolytic enzymes called angiotonases, or hypertensinases, from their property of inactivating or destroying angiotonin.

Renal function can be determined by qualitative and semiquantitative methods such as the detection of proteinuria, study of the urinary sediment, estimation of excretory function by excretory urography and determination of blood urea and nonprotein nitrogen. Although the glomerular membrane is practically impermeable to plasma protein, the protein content of the glomerular filtrate is about 10 mg./100 cc., most of which is reabsorbed by the tubules. Proteinuria that is continuous throughout the day and night and exceeds 0.2 Gm./24 hours in the absence of cardiac failure and fever indicates renal damage, usually glomerular injury. Proteinuria that appears only during exaggerated lordosis or on assumption of erect position is usually functional.¹⁵ The organized sediment of the urine consists of the red and white cells and the casts which are of renal parenchymal origin, since they are dislodged tubular protein coagula. The examination of the urine sediment always must be made in a fresh speci-

men. Although the counting of cells or casts per high power field in the sediment of centrifuged urine is satisfactory for most screening purposes, the Addis count of the sediment collected over a 12 or 24 hour period is more accurate. Such counts in urine from normal subjects indicate that it may contain up to 0.5 million red cells, 1 million white cells and about 3,000 casts per 12 hours. Hematuria is seen in acute and chronic glomerulonephritis, acute and chronic pyelonephritis, essential hematuria and nephrosclerosis and with stones and tumors. Pyuria indicates inflammation or degeneration with destruction of tissue. Cylindruria indicates protein in the tubules. The crystalline sediment of the urine has little relation to renal function, except that excessive deposits of salts can be related to some metabolic abnormality, such as hypercalcinuria in hyperparathyroidism.

Blood urea and nonprotein nitrogen accumulate in the blood as reduction of glomerular filtration impairs their excretion by the kidneys. The rate of protein intake and metabolism, water balance and excretion, glomerular filtration and urine flow also regulate the degree of azotemia. Pyelography is a semiquantitative renal function test. The normal kidney will concentrate various organic iodine compounds which are injected intravenously. Because the various iodine preparations are handled by different kidney processes, it is important to know which preparation is administered. Diodrast and Hippuran are excreted chiefly by the renal tubules and Skiodan by the glomeruli. Kidneys which are unable to concentrate a specific gravity above 1.014 during a concentration test usually are unable to concentrate iodine compounds suf-

ficiently to be evidenced by x-ray. Differences in x-ray technic, in the dye used, in the rate of fluid movement in the kidneys and in the extent to which the excreted dye is diluted in the urine retained in the pelvis or bladder, all make for a wide range of variability on the x-ray. Although failure to form a shadow is presumptive evidence of poor renal function, occasionally it may be due to a temporary suppression of urine formation.

The quantitative methods of determining renal function include the clearance tests, the dye excretion tests, and concentration and dilution tests. Tests of renal clearance are the most precise means of evaluating renal excretory function. Clearance refers to the partial or complete removal of a substance from the blood during its passage through the kidneys, with concurrent urinary excretion. Measurement of clearance determines the rate at which the blood is cleared of a given substance. The rate of clearance is expressed as the least volume of blood that is equivalent in its content of some excreted substance to the amount of that substance appearing in the urine formed in one minute. Clearance rate is expressed in cubic centimeters of blood or plasma per minute. The clearance rate most often measured is that of urea.¹⁶ Although urea is partially absorbed by the tubules after filtration through the glomeruli, urea clearance measurement is a practical index of the rate of glomerular filtration. The technic does not involve the injection of a test material. Normal urea clearance is 40-65 cc. of blood cleared of urea per minute. While clearance may vary within relatively wide limits in the healthy person, a clearance of 60% or higher of the normal clear-

ance may be expected if no renal impairment exists.

The inulin¹⁷ or mannitol clearance test is a very exact measure of glomerular filtration. The polysaccharide inulin is not metabolized in the body and following intravenous administration, it is excreted entirely through glomerular filtration, being neither excreted nor reabsorbed by the renal tubules. The number of cubic centimeters of plasma which is cleared of inulin in one minute is equivalent to the volume of glomerular filtrate formed in one minute. Inulin clearance in an average male is 125 cc. of plasma cleared of inulin per minute.

Diodrast and para-aminohippuric acid¹⁸ (PAH) clearances have been used to measure renal blood flow and maximal tubular excretory function (tubular excretory mass). These substances, when injected intravenously to produce low plasma concentrations are almost completely cleared from the plasma in one passage through the kidney, being excreted largely by the tubules. The clearance of either is equivalent to the renal plasma flow. If either substance is injected rapidly enough to produce saturation levels in the renal plasma, the tubular excretory mass, the maximal ability of the renal tubules to excrete the substance is determined. The effective renal plasma flow using PAH is 600 cc. per minute. Allowing for a hematocrit of 0.4, the effective renal blood flow is 1,000 cc. per minute. The maximal tubular excretory capacity of the tubules using PAH is 85 mg. of PAH per minute. Comparison of the levels of filtration and renal plasma flow yields a ratio called filtration fraction, which represents the volume of filtrate formed from each cubic centimeter of plasma in the kidneys. This value, usu-

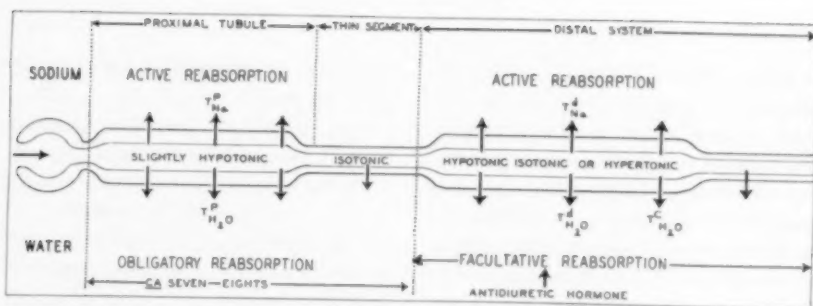
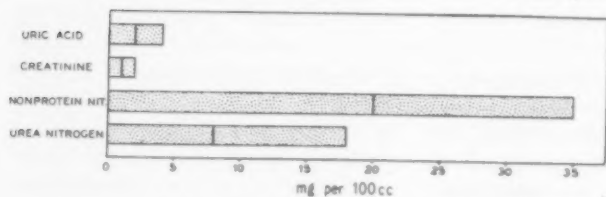
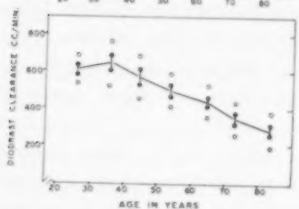
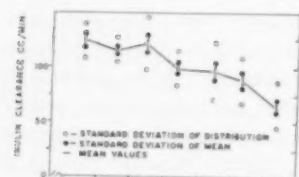


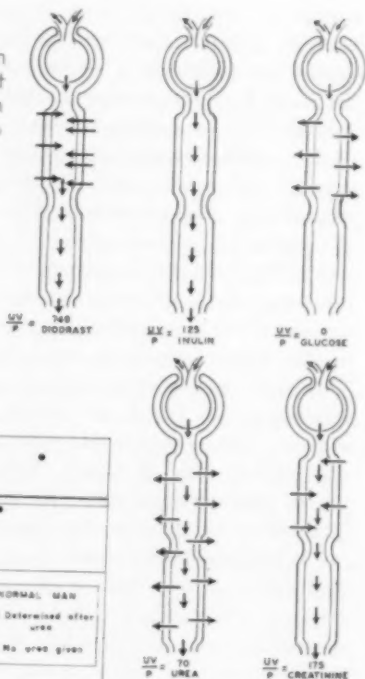
Diagram of areas of sodium and water reabsorption in tubule.



Normal mg. retention in 100 cc. of blood.



Average inulin and diodrast clearance in relation to age.



Diagrams of nephroses showing the clearance of inulin, glucose, urea, creatinine and diodrast.

ally inulin clearance/PAH clearance, is normally 0.2.

Dyes have been used for a long time in excretion tests. Phenolsulfonphthalein (PSP)¹⁹ indigo carmine and methylene blue are used to determine renal function capacity because the normal person eliminates the dyes almost completely in the kidneys and the percentage of dye present in the urine can be readily detected by colorimetric comparison. After intravenous injection of 6 mg. of PSP the normal person will eliminate from 30-50% of the injected dye in the first 15 minutes, 15-25% in the second 15 minutes and a sharply diminished percentage in the following samples. Indigo carmine and methylene blue are used in a similar manner. The dyes are mostly excreted by the tubules and are a good test for renal blood flow.

The osmotic work of the tubular cells is at a minimum when the specific gravity of the urine is 1.010. The ability of the tubules to form urine of higher or lower specific gravity is a measure of their capacity to work and is measured by a dilution or concentration test.²⁰ The normal stimulus to oliguria and the secretion of concentrated urine is liberation of pituitary hormone into the blood and this may be stimulated naturally by a period of water deprivation or artificially by injection of posterior pituitary extract. In the Fishberg test²¹ a 12 hour nocturnal deprivation of fluid is followed by the collection of three specimens of urine at hourly intervals. Normally the specific gravity of one of the specimens should exceed 1.023 if the kidneys can concentrate the urine effectively. As the renal function is progressively impaired, the specific gravity diminishes to about 1.007, which is about the specific gra-

vity of protein-free blood plasma. The injection of pituitary extract speeds up the concentration test and standardizes the stimulus, while avoiding the delay and discomfort of prolonged fluid deprivation. The specific gravity and urine volume are measured during one or two hours after the subcutaneous injection of 10 units of posterior pituitary extract.²² The results are similar to the Fishberg test.

The modified Mosenthal test²³ is an excellent method of determining the kidneys ability to dilute the urine. Urine excreted by healthy kidneys varies widely in both volume and specific gravity during 24 hours and thus the body fluids are maintained at constant levels regardless of the periodic intake of food and fluids. Diseased kidneys lose this adaptive ability and specimens of urine collected over 24 hours tend to be more uniform in volume and concentration. On a normal three meal daily diet and the intake of only one pint of water at each meal, six two hour specimens of urine are collected over 12 hours during the day and one 12 hour night specimen is collected. The healthy kidney excreted about three to four times as much urine during the day as during the night. Specific gravities of the urine collected during the day should have a difference between the highest and the lowest of no less than eight or nine points. Impaired renal function is indicated when the variation is less.

Kidney function tests are extremely useful in determining the ability of the kidneys to respond to normal demands as well as in measuring the degree of impairment.²⁴ The tests indicate the extent to which the kidneys are performing one of their functions or may measure their ability when placed un-

der an increased work load. The tests indicate a functional ability or extent of damage, rather than the nature of the lesion causing the damage. The nature of the actual pathology is more likely to be disclosed by the clinical picture, the examination of the urine or by x-ray. Some tests, such as the blood, nonprotein-nitrogen, PSP excretion and dilution and concentration tests, are essentially tests of the total functional capacity of the kidneys, while the rate of glomerular filtration, excretory mass of the tubular tissue and total blood flow through the kidney are more specialized tests and are used mostly for research.²⁵

More than one renal function test must be performed in the study of renal function. The results of the kidney function tests must be cautiously interpreted because the results may be affected by extra-renal factors such as lowered blood pressure, circulatory failure, dehydration, hydronephrosis, residual bladder urine, heart disease, severe general anemia and cystitis.²⁶

The three main diseases of the kidneys are hypertension, either essential or nephrosclerosis, glomerulonephritis and pyelonephritis. In hypertension the initial lesion is in the arterioles and first effects are on renal nutrition and the tests affected early are the concentration ability and secretory capacity of the tubules and the tests affected late are of filtration. In glomerulonephritis the initial lesion is in the glomerular capillaries and the first effects are on glomerular filtration. The tests affected early are those of filtration such as urea and inulin clearance and the tests affected late are those testing the tubules. In pyelonephritis the initial lesion is in the tubules and peritubular tissues and

the first and late effects are variable. The late effects of all three diseases are very similar and tests of total renal function, glomerular function and tubular functions may be impaired.

In essential hypertension or nephrosclerosis with hypertension there is decreased excretion of PSP, the concentrating ability may be unimpaired in the early stages, but later the specific gravity is stabilized at about 1.010, there is usually a gradual decrease in urea clearance, the Diodrast and PAH acid clearance is decreased in the early stages, inulin clearance is not decreased until the later stages of the diseases and the tubular excretory capacity is decreased in the early stages.²⁷

In congestive heart failure,²⁸ the PSP excretion is frequently decreased, the prerenal deviation of water results in fixation of the specific gravity at a relatively high level in the modified Mosenenthal test, the Diodrast and PAH acid clearance is markedly decreased and the inulin clearance is decreased.

In acute glomerulonephritis,²⁹ the PSP excretion is decreased in most patients but in incipient stages excessively high excretion occasionally occurs. There is diminished ability to concentrate the urine and these tests are particularly useful in determining the degree of recovery. Urea clearance frequently decreases to 50% or less of normal during the first two months of the disease and continued low clearance after four months is indicative of the chronic or terminal stage. There is decreased clearance of Diodrast or PAH, significant decrease in inulin clearance and decreased tubular excretory capacity.

In chronic glomerulonephritis concentration tests usually yield low values

in the latent stages. In the chronic active stage, fixation of maximal specific gravity between 1.008 and 1.016 is common and in the terminal stages, the tests are not a satisfactory index of progressive impairment. In the latent stage the urea clearance is decreased in most patients although readings are occasionally normal or above normal. In the nephrotic stage, clearance is stabilized at a low level and in the terminal stage clearance commonly falls below 20% of normal. There is decreased Diodrast and PAH acid clearance, inulin clearance and tubular excretory ca-

capacity in the nephrotic stage and a marked decrease in the terminal stage.

In pyelonephritis there is a frequent decrease in PSP excretion, ability to concentrate, ability to dilute and urea clearance and a definite decrease in Diodrast and PAH acid clearance and inulin clearance and a pronounced decrease in tubular excretory capacity.

In chronic nephrosis in the absence of nephritic lesions PSP excretion and concentration is usually normal while urea clearance is frequently higher than normal, especially in children.

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Clini-Clipping



Anesthesia of nose with cotton pencils. A. anterior ethmoidal nerve B. sphenopalatine ganglion. C. anterior palatine

nerve. Reduction of nasal fracture, using padded Kelly clamp for elevation, and thumb for molding.

The Use of Pituitary Adreno-Corticotrophic Hormone in Major Surgery

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It has long been considered that the adrenal cortical hormones play an important role in the syndrome of surgical shock. Since cortical secretion is essential to life and enables the body to respond to various conditions of stress and strain, increased cortical activity may become necessary during the strain of surgical operations.

The clinical features of low blood pressure, diminished blood volume, haemoconcentration and increased capillary permeability present in surgical shock, are in many respects similar to those occurring in adrenal cortical failure and to the state of affairs obtaining in adrenalectomized animals. Attempts to restore the blood volume in such animals produce only very temporary improvement and death occurs unless cortical extract is given. It may well be that the adrenal cortical hormones are essential to the maintenance of vasomotor tone, and failure of their secretion

impairs the activity of the vasomotor center and predisposes to the onset of shock.

It is reasonable to assume, therefore, that in major surgical procedures the adrenal cortical secretion must be well maintained, otherwise the vasomotor center will become exhausted and surgical shock ensue. This is particularly liable to occur in old and debilitated patients where the activity of the adrenal cortex may be diminished and its secretion barely adequate to meet the strains of normal life. During major surgical procedures the "cortical reserve" may prove inadequate and the patient pass into a state of irreversible shock. Such a state of affairs may also occur in younger patients undergoing very major

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operative procedures in which there is considerable tissue trauma, and which require prolonged and deep anaesthesia.

With a view to ensuring adequate cortical secretion in patients during major surgery, and likely to suffer from adrenal cortical failure, we have been administering A.C.T.H. during operation. It is felt that A.C.T.H. will evoke maximum secretion during the period of stress, and being the normal stimulus to cortical activity, its employment is perhaps more appropriate than the use of cortisone itself. In assessing the value of A.C.T.H. in this connection the cases selected for its use have been old and debilitated patients, or patients of younger age in whom a very prolonged and major operation was carried out. The drug has not been employed in the preoperative period, but has been given by intravenous drip during the operation and in certain cases in the immediate post-operative period.

While recording our experiences we are most conscious of the difficulties and dangers in comparing the operative and postoperative courses of different surgical patients, in that it is impossible to state categorically that any individual case would or would not have benefited from any specific therapy.

We were fortunate, however, in having to perform precisely similar operations on the same patient on two separate occasions. The patient suffered from obstructive jaundice due to a tumour of low malignancy obstructing the common bile duct. The tumour was excised and a plastic flap constructed from the superior surface of the first part of the duodenum, to replace the excised part of the duct. This procedure was necessary because the patient had been subjected to cholecystectomy one

year previously. Recurrence of obstruction took place six months later and a similar procedure was employed to reconstruct the duct at a second operation. The patient's condition during operation and in the immediate postoperative period gave rise to grave anxiety on the first occasion, but at the subsequent operation the same procedure was very well tolerated and postoperative progress smooth and rapid. The operation and anaesthetic conditions were the same on each occasion, except that at the second operation A.C.T.H. was used. The experience gained and the impressions formed from a study of this first case encouraged the use of A.C.T.H. in a series of specially selected cases, which are here recorded.

Technique In each case the patient was given spinal anaesthesia. Nupercaine 1/1500, in doses of between 14 cc. and 16 cc., was given using the Howard Jones technique. This was followed by a small dose of thiopentone and suxamethonium bromide (M & B), and intubation with a cuffed endotracheal tube. Thereafter anaesthesia was maintained by nitrous oxide and oxygen.

A.C.T.H. was given by intravenous drip, 10 units being diluted in 500 mls. of $\frac{1}{2}$ N. saline. In two instances the A.C.T.H. was given in similar dose mixed with a blood transfusion.

Case Records

Case 1. Mrs. A.A., aged 66, suffered from duodenal ulcer for many years, and had been submitted to gastro-enterostomy for the cure of her long standing dyspepsia. Stomal ulceration occurred and she developed anaemia as the result of persistent and recurrent bleeding. Her nutrition was poor, her general condition bad, and she suffered from arteriosclerosis.

At operation the stomal ulcer was excised and partial gastrectomy performed. One hour after the start of the operation the patient's condition began to deteriorate rapidly and the blood pressure became unrecordable. Blood transfusion containing 10 units of A.C.T.H. was given and recovery was dramatic. The blood pressure returned to the former level within a few minutes of the commencement of the A.C.T.H. drip.

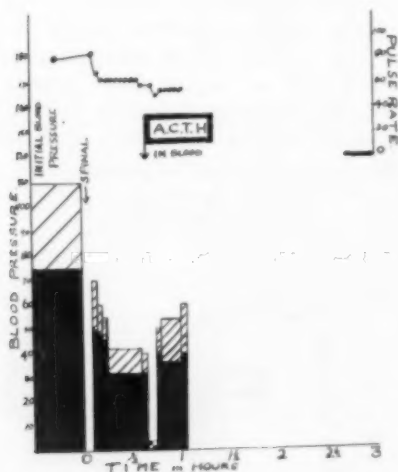


Fig. 1. Showing effect of ACTH in blood drip on patient suffering from collapse (Case 1).

Case 2. Mrs. A.T., aged 73, suffered from a very extensive carcinoma of rectum with gross sepsis, and was in very poor general health when abdomino-perineal resection was performed.

Forty minutes after the start of operation the patient's condition began to decline, the pulse rate rose steadily over a period of 30 minutes and the blood pressure gradually fell. A.C.T.H. was given by intravenous drip during the

subsequent period of one hour and resulted in a steep fall in the pulse rate and a rise in blood pressure. After completion of the A.C.T.H. drip, blood transfusion was started but did not produce any further elevation in the blood pressure.

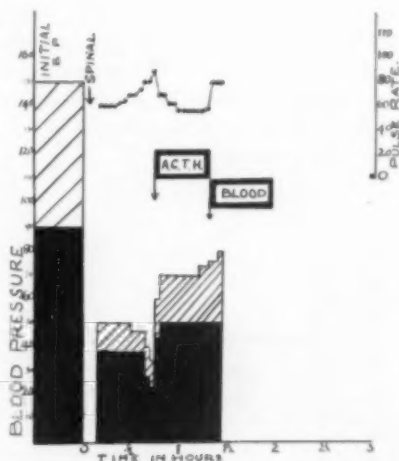


Fig. 2. Demonstrating the rise of B.P. and fall of pulse rate when ACTH is used in saline drip, similar to that observed in Fig. 1. Subsequent blood transfusion—did not alter the level of blood pressure (Case 2).

Case 3. Mrs. E.H., aged 71, was operated on for obstructive jaundice of six weeks' duration, due to a carcinoma of the head of the pancreas. The head and neck of the pancreas, together with the first, second and third parts of the duodenum and the pyloric antrum were excised.

The body of the pancreas was enplanted into the remnant of the duodenum, and the stomach was anastomosed to a long loop of jejunum, the gallbladder being anastomosed to this

long afferent loop proximal to the gastrectomy stoma.

The patient's blood pressure, after an initial fall due to the spinal anaesthesia, kept at a constant level of 50/30; after 70 minutes a blood drip containing 10 units of A.C.T.H. was given and the blood pressure rose rapidly to 70/45. (Fig. 3). Each day for three days after operation 10 units of A.C.T.H. were given by intravenous drip over periods of from 5 to 7 hours. The sensation of well being following the administration of A.C.T.H. in the post operative period was very pronounced.

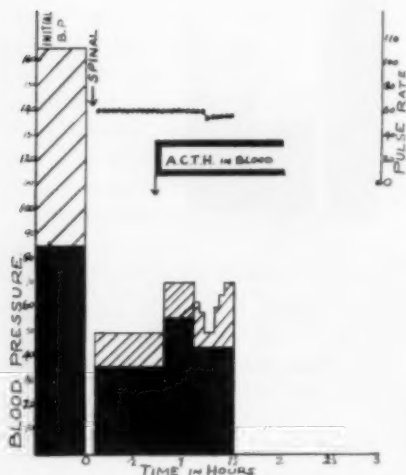


Fig. 3. Showing effect of ACTH in maintaining satisfactory level of blood pressure during later stages of major operation (Case 3).

Case 4. Mrs. E.B., aged 63, had pyloric obstruction of six months' duration, due to a pre-pyloric malignant growth. At operation the entire stomach, spleen and omentum were removed through an abdominal approach, and

an oesophago-jejunal anastomosis performed.

Fifteen minutes after the administration of the anaesthetic the pulse rate was 80, and the blood pressure was stable at 70/50, these conditions being maintained with little variation for the following 40 minutes. At this stage dissection in the region of the head of the pancreas was undertaken and the patient's condition progressively deteriorated. The pulse rate rose to 100, and the B.P. fell to 60/40. At this stage A.C.T.H. was given by intravenous drip and the patient's condition rapidly improved; a steady fall in pulse rate associated with a rise of blood pressure occurred and the improvement was progressive in spite of further extensive dissection of the head of pancreas.

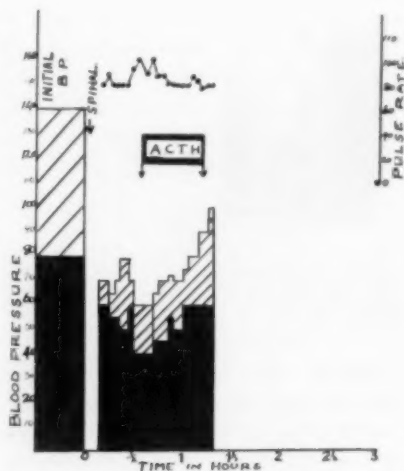


Fig. 4. Showing steady rise in blood pressure and fall in pulse rate following ACTH drip (Case 4).

Case 5. Dr. W.J.H., aged 65, developed a gastro-jejuno-colic fistula follow-

ing stomal ulceration after a gastro-enterostomy for duodenal ulcer. At operation the fistula was excised "en bloc" and a partial gastrectomy was performed with repair of the colon.

Thirty five minutes after the commencement of the operation the patient's condition began to deteriorate and the skin became cold and sweating occurred. A drip containing 10 units of A.C.T.H. was started and a steady and sustained improvement in the patient's condition took place.

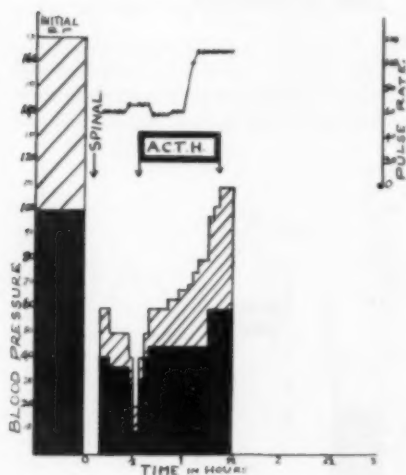


Fig. 5. Steady rise in systolic pressure on ACTH drip (Case 5).

Case 6. Mr. J.Y., aged 69, suffered from dysphagia, of six months' duration, due to a carcinoma of the lower end of the oesophagus. The growth was excised through a left sided thoraco-abdominal incision, and the lower one-third of the oesophagus, together with the spleen and the stomach, was excised. The continuity of the oesophagus was restored

by a Roux-en-y anastomosis with the jejunum.

On this occasion the patient was given A.C.T.H. at an early stage in the operation. The condition of the patient was well maintained throughout the operation lasting over two hours. The pulse and B.P. readings showed no variation.

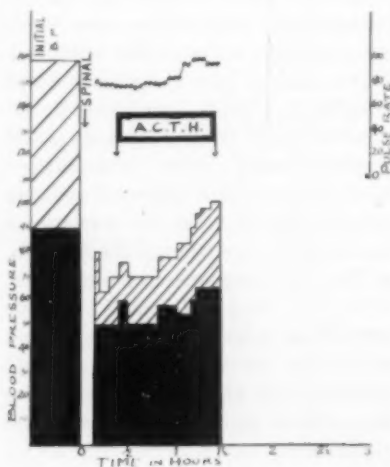


Fig. 6. ACTH drip started in early stages of operation in which the patient's condition remained very satisfactory throughout operation (Case 6).

Case 7. Mr. J.W., was operated on for a large para-esophageal hernia. The operation was carried out through an abdomino-thoracic incision, and reduction and repair effected.

A.C.T.H. was given soon after the start of the operation, as in case 6, and the patient's condition remained constantly satisfactory throughout the whole procedure.

Case 8. Mr. H.G., aged 67, had a carcinoma of the lower one-third of the

oesophagus, and had previously suffered from T.B. of the right lung. Oesophagectomy was performed through a thoraco-abdominal approach, and a Roux-en-y anastomosis carried out between the proximal end of oesophagus and the jejunum.

Thirty five minutes after the commencement of operation the patient became collapsed and the B.P. unrecordable. At this stage 20 units of A.C.T.H. were given by rapid intravenous injection, and thereafter he rapidly improved. Fifteen minutes later a further dose of 20 units of A.C.T.H. were given by intravenous drip over a period of 50 minutes, during which time further improvement in the patient's condition occurred. Fig. 8 shows the response of the B.P. to the injection of the A.C.T.H. on the two occasions mentioned. Restoration of the blood volume by intravenous fluid did not appear to play any part in the restoration of the patient's condition since subsequent blood transfusion did not in any way alter the state of affairs.

Patient received A.C.T.H. in saline drips for four days after operation. The progress of the patient was highly satisfactory until the fifth post operative day when death occurred suddenly. At post mortem examination, no cause of death could be determined, but it was considered that sudden adrenal failure might account for the patient's very unexpected death.

Discussion The value of cortisone and of the pituitary adrenocorticotrophic hormone (A.C.T.H.), in shock associated with severe burns, is now well recognized. Though the idea that the adrenal cortical hormones might prove of benefit in surgical shock was first advanced by Swingle (1933), it is only

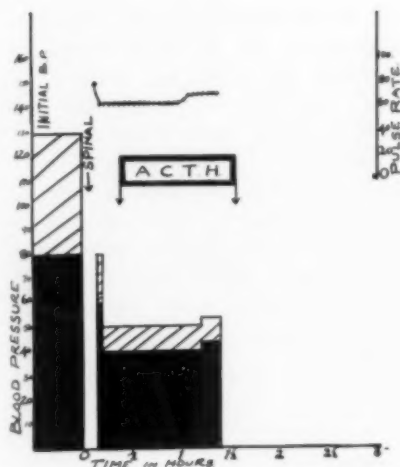


Fig. 7. ACTH started early in operation, during which patient's condition remained satisfactory and no fall in B.P. took place (Case 7).

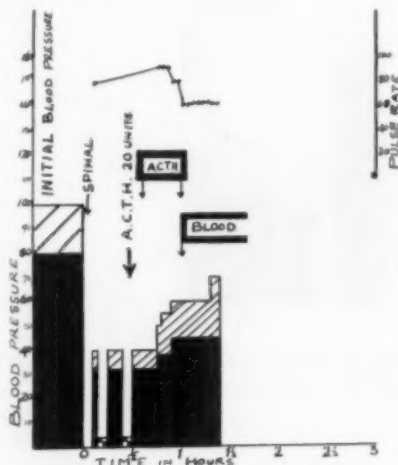


Fig. 8. Showing use of larger doses of ACTH in patient undergoing excision of lower one-third of oesophagus (Case 8).

recently that clinical reports have been published which tend to support this thesis. Corrado (1941) reports on 33 cases which had been given an oral

adrenal cortical hormone for 10 to 30 days before operation. The patients so treated withstood the stress and strain of the operative procedure better than in control cases not so prepared. Armstrong and Jimenez (1952) reported on the use of A.C.T.H. in the treatment of severe shock in three patients who had undergone major operations. In all those cases the shock had been very severe and had failed to respond to the usual measures which had been taken. The administration by rapid intravenous drip of 40 mgms. of corticotrophin in 500 mls. of isotonic saline produced rapid and dramatic recovery in all cases.

The series of cases recorded in this paper is small but serves to illustrate the effects which have been noted, and which are epitomized in Fig. 9.

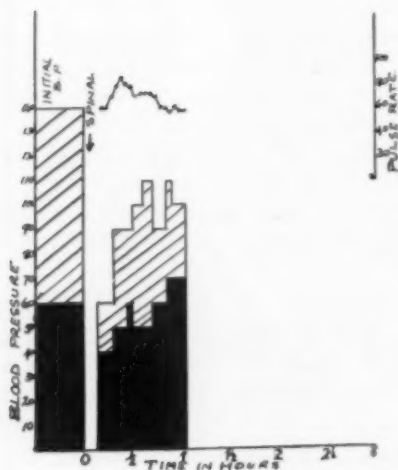


Fig. 9. Vide test.

These effects are as follows:—

(a) **Treatment of Shock During Operation** We have been greatly impressed by the effect of A.C.T.H. in patients

whose condition during operation has progressively deteriorated as in cases 2 and 4, or who have suddenly collapsed as in cases 1 and 5. In such circumstances intravenous A.C.T.H. restored the patient's condition within a few minutes of the commencement of the drip. In case 1, the A.C.T.H. was given in a blood drip but the effect on the blood pressure was so rapid that the improvement could not be attributable to blood replacement. In case 2, A.C.T.H. was equally effective when given in a saline drip, and subsequent blood transfusion (given empirically) was apparently without effect.

In recording these results blood pressure readings and pulse rate charts are reproduced, but it is felt that the improvement in the patient's condition was even more marked than the readings would lead one to suppose.

(b) **Increased Resistance to Surgical Trauma** In case 4 it was noted that, prior to the start of the A.C.T.H. drip, the patient withstood dissection in the region of the pancreas badly and trauma to this area caused marked deterioration of his condition, with fall of B.P. and rise of pulse rate. After the A.C.T.H. drip had been started, further trauma to the pancreas of equal severity was well tolerated and both the blood pressure and pulse rate remained unchanged.

(c) **Prevention of Shock** In cases 6 and 7 the A.C.T.H. drip was started at a very early stage in the operation while the patients' condition was good. Both patients maintained good condition throughout prolonged and traumatic surgical interference.

(d) **Stability of Blood Pressure** It is commonly found that a patient's blood pressure may be very labile and show marked variations during major surgical

Table 1. Summary of Cases

CASE	AGE	SEX	OPERATION	A.C.T.H.	TIME OF ADMINISTRATION	COMMENT
1. A.A.	66	F	Gastrectomy and Excision of Stomach Ulcer	10 Units in BLOOD drip.	30 Mins. after start of operation.	Marked improvement within 5 mins. of start of A.C.T.H. in drip.
2. A.T.	73	F	Abdomino-Perineal Resection.	10 Units in SALINE drip.	50 Mins. after start of operation	Marked improvement as in Case 1.
3. E.H.	71	F	Subtotal Pancreatectomy.	10 Units in BLOOD.	70 Mins. after start of operation.	The patient tolerated the surgical procedure extremely well. Post operative A.C.T.H. produced a marked sense of well being.
				10 Units in SALINE.	6 hrs. post op.	
				10 Units in SALINE.	24 hrs. post op.	
				10 Units in SALINE. 10 Units in SALINE drip.	48 hrs. post op. 72 hrs. post op.	
4. E.B.	63	F	Total Gastrectomy.	10 Units in SALINE drip.	55 Mins. after start of operation.	Trauma to pancreas caused marked deterioration in patient's condition. Condition improved by A.C.T.H. and further pancreatic trauma was well tolerated.
				10 Units in SALINE drip.	6 hrs. post-operatively.	
5. W.J.H.	65	M	Excision of Gastro-jejunal fistula.	10 Units in SALINE drip.	35 Mins. after start of operation.	Sustained improvement after A.C.T.H.
6. J.Y.	69	M	Oesophagectomy.	10 Units in SALINE drip.	15 Mins. after start of operation.	No fall in B.P. during operation. Pulse and B.P. remained remarkably steady during operation lasting two hours.
7. J.W.	49	M	Para-oesophageal hernia.	10 Units in SALINE.	15 Mins. after start of operation.	No fall of B.P. Pulse and B.P. remained steady throughout operation.
8. H.G.	67	M	Oesophagectomy.	20 Units in one rapid dose. 20 Units in SALINE drip.	35 Mins. after start of operation. 50 Mins. after start of operation.	The response to A.C.T.H. was dramatic. A.C.T.H. was continued in post operative drip saline for some days. The patient died suddenly after the A.C.T.H. had been stopped. ? adrenal failure.

operations. A.C.T.H. administered during operation appears to produce a stable blood pressure showing little or no variations throughout prolonged procedures, as exemplified by cases 6 and 7.

(e) **Euphoria** In case 3 the patient was given A.C.T.H. at intervals over a period of three days after operation. It was noted that the hormone produced a marked sense of well being, in addition to the effects already noted above.

(f) **Overdosage** Case 3 was a very debilitated patient of poor physique who tolerated operative interference very badly, until A.C.T.H. had been given in large doses of 40 units during the operation. In the post operative period it was found that when the A.C.T.H. drip was stopped the patient's condition tended to deteriorate, so that administration was continued over a more prolonged period. After four days the patient's condition was highly satisfactory and the drip was stopped. The following day death occurred suddenly and unexpectedly, and at post mortem no cause of death was found.

It was suspected that the A.C.T.H. had been given in excess and that the adrenal cortex had been over stimulated and had suddenly failed.

(g) **Wound Healing** On theoretical grounds it would be expected that wound healing would be delayed. In all the recorded cases healing appeared quite normal.

No leaking occurred from the gastro-intestinal stomata, and healing of the wounds was quite satisfactory.

(h) **Fluid Retention** In no instance was there any evidence of fluid retention; intake and output charts were kept as a routine and no variation from the usual state of affairs was noted.

Conclusions The cases here recorded are a representative series and epitomize our experiences during the past two years with the use of A.C.T.H. in very major surgical operations. These procedures have been carried out in a unit which has unique appointments for the selective admission of special types of cases. In such circumstances it has been possible on many occasions to admit similar cases at the same time thereby affording the staff ample opportunity to observe and compare the progress of each individual case. While deeply conscious of the dangers and difficulties of comparing the operative and post-operative progress of such cases, we are convinced that the cases treated with A.C.T.H. have been quite outstanding in their progress when compared with similar cases not so treated.

A.C.T.H. is effective in restoring the blood pressure which has fallen as the result of surgical trauma, and appears to increase the patient's toleration of surgical intervention.

If given in the early stages of operation the onset of surgical shock is prevented and there appears to be a stabilizing effect on the vasomotor centre so that wide variations of the blood pressure do not occur.

In the postoperative period A.C.T.H. produces a pronounced sensation of well being, and its effect is produced within minutes of the start of its administration.

The hormone acts very quickly and in minimal doses. Though there has been no cases of impairment of wound healing and no evidence of fluid retention, it would appear that overdosage is a very definite danger. One case in the series died we believed as the result of adrenal failure following the withdrawal of large doses of A.C.T.H.

Summary

The use of A.C.T.H. in major surgery is described and a theoretical basis for its use is stated. The technique of administration is outlined and its beneficial effects fully discussed. The dangers of prolonged administration and overdosage are emphasized.

Acknowledgments

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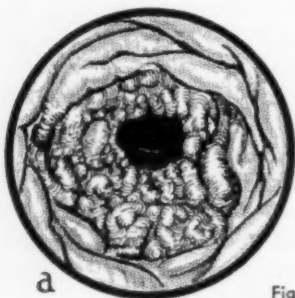
edge the help offered by Squ./Ldr. Linnett, R.A.F. Medical Service with the photography and preparation of the operative charts.

We are grateful to Crookes Laboratories for generous supplies of A.C.T.H. during a period of great scarcity of the drug.

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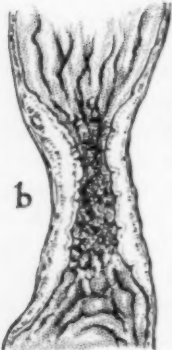
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a

Figure 1.
Malignant stricture of sigmoid.



b

a. Proctoscopic view showing lesion encircling the bowel.

b. Longitudinal view showing puckering of bowel wall inward with decrease of lumen.

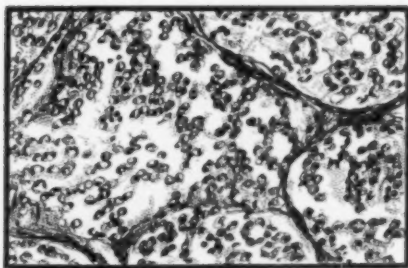


Figure 2. Microscopic view of Mucoid Adenocarcinoma.

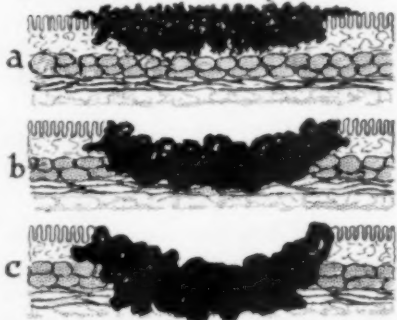


Figure 3. Cancer invasion. a. mucosa. b. muscle layers, c. serosa.

Are We Finding Them?

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General practitioners no doubt deliver and care for more infants than any other group of physicians. For this reason they are in the unique position of encountering the largest number of congenital cardiac malformations.

It has been said that approximately one percent of the infants born have some form of congenital malformations of the heart. If this figure is approximately correct, it is not hard for us to see that in the course of our pediatric practice we will have the opportunity to diagnose many of these anomalies. We have accepted as routine, the physical examination of the child for other deformities, but, in the past, the lack of interest in cardiac anomalies has resulted in poor recording of history, and failure to educate parents of these children because so little could be accomplished for them. Why should they now, all of a sudden, become so important?

Recent advances in cardiac surgery and judicious use of antibiotics have saved many children from a life of invalidism. As important as cardiac catheterization, angiocardiology and many more improved diagnostic procedures are, in the final diagnosis, they

cannot supplant but will be enhanced by a well-taken chronological history and physical examination, as well as blood studies, electrocardiography and roentgenography.

Men in general practice will see these cases first and it is our job to "shake them out of the bushes," so to speak, without over-emphasizing inconsequential findings and causing needless expense and worry to the parents. We must not only recognize them, we must prevent infection from complicating them, and be willing to refer them at the optimal time for correction.

Severe and complicated cases will be quite evident, and, in these cases, our responsibility is limited to the knowledge of when and where to refer them, so that teams of cardiologists and laboratories are made available. Interesting as these anomalies are, they will not be taken up in detail here, and the interested reader will find an abundance of material in the list of references. However, we must have a working knowledge of the principal lesions, and for the practical purposes of this article, only the major symptoms and congenital malformations will be mentioned.

Whatever first draws attention to these lesions, we are apt to think in terms of the adult chest, not remembering that the transmission, location and quality of murmurs can be of but little aid in the infant's heart, so small that it is practically covered by the bell of the stethoscope, and pressure variations of the two sides of the heart are so small that murmurs may have very little quality. We are also dealing with a rapidly changing situation, in which the growth of the heart presents different relationships, in which murmurs may come and go or change. In early infancy murmurs are of little diagnostic aid, but should be considered important until definitely ruled out as functional. In older children murmurs may be high pitched, loud and well transmitted, frequently accompanied by thrills.

The hemic murmur of the anemic patient, the venous hum over the jugular vein and murmurs of acquired heart disease must all be differentiated from those of congenital heart disease.

When a continuous murmur, often described as a machinery-like hum, is encountered, a patent ductus arteriosus should be considered. These murmurs are often accompanied by a thrill, best felt in the first or second intercostal space near the sternum.

The ductus arteriosus is a normal shunt during fetal life, which functionally closes at birth, and becomes anatomically obliterated by the fourth month. If, for some reason, this shunt does not close, the blood is passed from aorta to pulmonic circulation, increasing the amount of blood in the pulmonic circulation. A hum is caused by the blood passing to and fro, depending upon the variance of pressure between the two great vessels as well as the size

of the shunt. At times, a patent ductus, accompanied by other abnormalities, may even be life saving. If this hum is present, blood pressure changes should be watched. A wide pulse pressure is usual, and drops with exercise, while normal persons show a rise of diastolic pressure after exercise. (Normal less than 40 mm.)

One should be aware of the child whose growth seems to be retarded, particularly, if she does not develop like her brothers and sisters. This may be the first clue to an atrial septal defect. These defects occur in females in a ratio of about three to one, and these children often have a decreased physical tolerance, and will complain of tiring easily, actually stopping in the middle of play to rest. At these times a temporary cyanosis may be noted. They are prone to respiratory infections, and must be protected by frequent chemotherapy or antibiotics.

At times, this diagnosis can be made by visible or palpable means. The anterior bulging of the left precordium, with evidence of pulsations along the left sternal border is in evidence, due to a large, overactive right ventricle and pulmonary artery. A tapping or heavy apical impulse is often associated with these findings. The EKG may show an incomplete right bundle branch block with right ventricular hypertrophy. Roentgenograms may be of aid, but, often the differential diagnosis, between atrial septal and ventricular septal defects, can be made only by cardiac catheterization.

The extent of either auricular or ventricular septal defects is purely a matter of timing, or arrest, in the normal development of the fetal heart. Ventricular septal defects are quite common,

according to Abbott, occurring in twenty-nine percent of the recorded cases of congenital heart disease.

The primary ventricular defects, which constitute about six percent of these cases, are characterized by obscure symptoms, and the patient usually is unaware of the abnormality. These may first be found by the physician on physical examination. The murmur produced is systolic in time, harsh, and not well transmitted. The pitch may vary with reverse ratio to the size of the opening.

Ventricular septal defects are, many times, associated with other defects, such as Tetralogy of Fallot and Complex of Eisenmenger. Septal defects may seem to be insignificant for long periods of time, but, when the defect is such that the increasing pressure of the left ventricle is transferred to the right ventricle, right ventricular failure may be produced in a relatively short period of time. This, if not corrected at the proper time, will inevitably lead to an early death. Many times, these lesions are picked up on school examinations. One should look for the murmur along the left third and fourth interspace, usually associated with a thrill, and with an increase in the pulmonic second sound, which may be split. Recent cardiac surgery is proving to give spectacular cures in this type of congenital malformations.

If cyanosis, and clubbing of fingers, directs our attention to a possibility of congenital heart disease, it is usually not difficult to make a diagnosis. There is, approximately, seventy-five percent chance that there is a Tetralogy of Fallot, particularly if the child is over one year of age.

Briefly, what is known as Tetralogy

of Fallot is a combination of anatomical defects: a stenosis of the pulmonary artery, interventricular septal defect, with aorta overriding the interventricular septum so that blood from both ventricles enters the aorta, and is accompanied by hypertrophy of the right ventricle. The degree of cyanosis may depend upon the relativity of these defects and whether or not there is pending right ventricular failure.

Other cardiac malformations producing cyanosis are, atresia of the tricuspid or pulmonic valves, transposition of the great vessels, or Eisenmengers Complex, which resembles Tetralogy of Fallot, except that the pulmonary artery is usually normal in size or enlarged. Although cyanosis may be due to developmental cardiac defects, it is surprisingly enough, not a symptom in the majority of cardiac malformations.

Whenever juvenile hypertension is encountered, the possibility of coarctation of the aorta should be considered. A diagnosis can be made by palpating the abdominal aorta and femoral arteries for pulsation, or comparing the blood pressure in the upper and lower extremities. A difference in skin temperature may, usually, be noted between the upper and lower half of the body. Coarctation is a narrowing or constriction of the aorta, near the insertion of the ductus arteriosus. It may be likened to a napkin ring constriction, which may vary from a slight obstruction down to almost pinpoint size opening. Nature provides a tremendous collateral circulation in these cases, and, through this, the lower body receives its blood supply. In well advanced cases, the dilatation of the intercostal arteries produces erosion of the ribs, and may be noted by the radiologist.

As development of surgical measures to correct congenital malformations becomes increasingly effective and safe, the responsibility of the physician becomes greater. Since we are able to give the parents a more optimistic prognosis for these children, it is easier, as well as important, to acquaint them

with the situation as much as possible. Under these circumstances, no child should go into cardiac failure, or advance beyond the years of optimal surgical relief, without being given a chance to live a life, well within the limits of normal.

Conclusions

1. Men in general practice have a grave responsibility to be able to recognize cardiac malformations, since they will encounter them in approximately one percent of their pediatric practice.

2. A careful chronological history will be invaluable in the care of patients with cardiac malformations. It will help in discovering the asymptomatic cases, in educating and reassuring the parents,

and will assist in referring patients at the optimal time.

3. Clues, or physical findings and symptoms, such as murmurs, cyanosis, clubbing of fingers, juvenile hypertension, failure to grow and develop at the usual rate, and fatigability, often help in diagnosing congenital heart malformations in time to accomplish corrections that will allow pediatric patients to assume a normal life.

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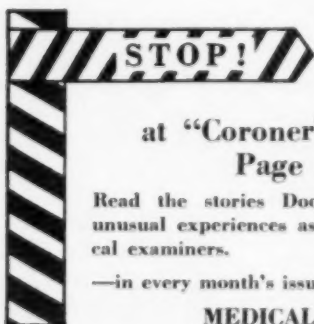
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MEDICAL TIMES

Comments on Iron Metabolism

With Special Reference to Iron Deficiency Anemia

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In the practice of medicine there are probably few medications used more commonly than iron containing preparations. It behooves a physician, therefore, to have some understanding of current ideas of the mechanisms of absorption, metabolism and toxicity of iron. Consequently, these remarks will be so organized as to discuss: (1) the fate of ingested iron; (2) the estimated clinical requirements; (3) the diagnostic features of its deficiency; (4) the use of various therapeutic preparations, and (5) certain toxicity studies of iron.

The "availability" of dietary iron for absorption depends on numerous factors. Some is in porphyrin compounds or present as colloidal ferric hydroxide or may form precipitates with phosphates and complexes with phytates. These are all combinations that decrease absorption. The acid gastric secretion serves two purposes in utilization. At a low pH the ferric hydroxide aggregates are dispersed and, in the presence of ascorbic acid and other reductants, the ferric may be reduced to the ferrous ion; the form in which most is absorbed through the intestinal mucosa. As food

phytates may be a factor in absorption it is conceivable intestinal phosphatases also play a role in utilization.¹

Even more important than such inter-intestinal factors is the role of the gastro-intestinal mucosa in influencing absorption. Although the mere presence of excess fat in the lumen of the bowel does not interfere there is impairment in some cases with steatorrhea. In such instances there is no relation between the severity of bowel symptoms and the absorption of iron.^{2,3} Recently biopsies of gastric mucosa from patients with iron deficiency anemia have revealed a very high incidence of a non-specific gastritis.⁴ It has been suggested that in some cases the gastritis preceded the achlorhydria and development of iron deficiency. Although only a small percentage fed to a normal individual is retained, a chronically iron deficient human may absorb 10 to 20 times more.⁵ If, however, an animal such as a dog is made anemic acutely by blood loss and is then fed iron the absorption is not increased.⁶ Therefore, the question arose as to whether plasma iron might influence this; for in chronic iron deficiency

anemia the plasma concentration is decreased. In other words, could modification of the plasma iron level alter the absorption. This question was answered by showing that intravenous injection of a soluble iron salt immediately before the oral administration of radioactive iron to a chronically anemic dog did not decrease the intestinal absorption.⁷ Now in plasma there is a ferric binding beta-1 globulin, called siderophilin or transferrin. Normally approximately one third of the "binding capacity" of this protein is saturated with iron. This plasma protein also can be increased by intravenous injection just prior to oral administration of radioactive iron without increasing the absorption of the latter.⁸ Thus, it appears that the plasma iron and the transferrin do not have any direct control over absorption but serve only a passive transport role from storage depots and areas of hemoglobin breakdown to the bone marrow.

After entering the intestinal mucosa iron is bound by a crystallizable protein, apoferritin, forming a compound called ferritin.⁹ This is a combination of ferric hydroxide polymerized micelles with protein. Larger aggregates form hemosiderin and sufficient concentrations are stainable by the prussian-blue reaction. In iron deficiency anemia the amount of apoferritin in the intestinal mucosa decreases but reappears on the administration of iron. These are storage or utilizable iron depots and are present normally in other tissues such as bone marrow, liver and spleen. The demonstration, therefore, of such aggregates in the tissues is evidence that any anemia present could not be due strictly to lack of iron. The size of this storage pool may be 15 per cent or more of the total content of the body.¹⁰ It is in

such forms that any reserve is deposited until required for incorporation into hemoglobin.¹¹

Mention of reserve iron brings up the question of the actual clinical requirements. Various estimates of the average daily needs range from 5 to 17 milligrams.¹⁰ Probably only 10 to 15 per cent or even less of the dietary iron may be absorbed normally. That the control of the absorption is important is apparent when one recalls that the body ordinarily has no way of excreting large amounts. Small quantities escape in the urine, bile, sweat and desquamation of cells, but this approximates only 1 milligram per day. In iron deficiency anemia this quantity is even less. Women on the average may lose twice the above amount due to menstruation and under ordinary conditions their reserve can be quite small and insufficient to meet such demands as pregnancy and lactation. Several hundred additional milligrams are required in gestation. Although the quantity absorbed and excreted daily is small even in comparison with the amount metabolized as a result of red blood cell destruction (approximately 26 milligrams a day in an adult) the long term effects of small losses can be striking.

And what are these effects? The onset of symptoms of iron deficiency is characteristically insidious. In mild cases easy fatigability, lack of pep and listlessness are common complaints. Even on close questioning, unusual and excessive blood loss may not be recognized. Such patients need not show any weight loss, but dysphagia, glossitis and vague gastrointestinal symptoms annoy them. Headaches and insomnia are common. Often the complaints are longstanding. Occasionally such patients

on their first medical visit state they have been taking iron (and frequently under a doctor's direction) but they still may show evidence of deficiency. Sometimes this is due to the use of commercial preparations containing only small and inadequate amounts. On physical examination such patients show pallor. A soft blowing systolic apical murmur may be present. The spleen is occasionally palpable. Koilonychia may be striking in cases of long duration. Peripheral blood smears show achromia and the anemia is a microcytic hypochromic type. There may be moderate anisocytosis and poikilocytosis. Evidence of rapid regeneration such as reticulocytes, basophilia and nucleated red cells are absent unless there has been recent marked blood loss. The leucocytes and platelets are not remarkable. As there is an insufficient amount of iron for hemoglobin synthesis the maturation of normoblasts is altered. Thus, increased numbers contain only small amounts of hemoglobin and consequently appear polychromatophilic. There is depletion or even absence of hemosiderin in the bone marrow and iron granules in the normoblasts cannot be demonstrated.¹¹ There is no increased blood destruction in simple iron deficiency anemia. The serum bilirubin is not elevated but is frequently decreased as is the fecal urobilinogen. In uncomplicated deficiency there is a low plasma iron with elevated serum copper and erythrocyte protoporphyrin. The red blood cell life span is normal. The urine is not remarkable. Stool examinations for occult blood may be repeatedly negative in individuals with bleeding gastro-intestinal lesions because such blood loss not infrequently is intermittent. For days successive

stools may contain no demonstrable blood on routine examinations. Therefore, one's suspicion of such an intestinal lesion should not be discarded too quickly as a result of only three or four negative stool examinations. It is important to remember that iron deficiency in an adult is due usually to blood loss. Consequently the recognition of such a deficiency should be only one in a dual diagnosis. The cause should be the second diagnosis. As occult blood loss is frequently a facet of some underlying serious pathology identifying the etiology is as important as recognizing the deficiency.

Occasionally two hereditary conditions that do not respond to iron therapy but are associated with microcytic hypochromic anemia may be confused with simple deficiency. These are thalassemia minor cases and a less common hereditary condition occurring in males but apparently transmitted by females.¹² Thalassemia minor has been reported in a high incidence among individuals or descendants of individuals from the Mediterranean littoral.¹³ Despite a positive family history, the classical clinical features may be minimal and anemia quite mild. Even in asymptomatic patients the peripheral blood smear may be striking with anisocytosis, poikilocytosis and marked achromia with "target cells." The hemoglobin can be moderately low in the presence of a normal red blood cell count. The peripheral blood may show no erythroblasts on careful study, although stippling of the red blood cells is common. There is a decreased osmotic fragility. The plasma iron and copper and free erythrocyte protoporphyrin are elevated.

Another aspect with sufficient clinical significance to warrant mention is

alteration of iron metabolism occurring with inflammation.¹⁴ In cases of anemia associated with infection the administration of ferrous sulphate orally may cause little if any change in plasma concentration. The lack of hematological response to such therapy is due not only to impaired absorption but to altered utilization. The binding capacity of the plasma falls and even intravenous injection of iron fails to elevate and maintain a normal plasma level. Such injected iron is rapidly deposited in inflammatory tissue, spleen and liver. Obviously the treatment of any resulting anemia in such a case does not consist of giving excessive amounts but instead of treating properly the underlying infection.¹⁵ In passing it should be mentioned parenthetically that there is one inflammatory lesion that transiently may increase plasma iron, namely viral hepatitis.¹⁶ This finding might be of importance in the differential diagnosis of unexplained icterus as plasma iron is said not to rise with obstructive jaundice.

Assuming the above diagnostic problems have been clarified, what therapeutic measures should be tried? Obviously, any cause of excessive loss of blood requires proper management. A chronic infection may have impaired the utilization. If such etiological factors have been ruled out or correctly treated then the patient should respond to specific therapy. This can be administered adequately practically always by mouth. Ferrous sulphate in 0.2 gram tablets is commonly used. But in amounts of only one or two tablets after each meal such a preparation is irritating occasionally to the gastro-intestinal tract. Abdominal discomfort, anorexia or changes in bowel habits may result.

Even starting with a smaller amount and gradually increasing it may not eliminate the complaints. Fortunately ferrous gluconate is less irritating and can be given in similar doses. When either of these preparations is used, doses will suffice that are smaller than those used in the administration of ferric ammonium citrate or ferrous carbonate. Preparations containing cobalt are available, but should not be employed for three reasons: (1) the deficiency is one of iron and not of cobalt; (2) cobalt frequently causes very annoying gastro-intestinal symptoms even in small amounts, and (3) its role when administered in such cases is not clearly understood and at least until it is, the use of cobalt seems unwarranted.¹⁷ Unfortunately, there is a tendency to give "shotgun therapy" in anemia with preparations containing small amounts of iron, folic acid and vitamin B₁₂. Such therapy is not only ineffective and expensive, but may be dangerous.¹⁸ A variety of parenteral iron preparations have been used and recommended. Toxic reactions, however, occur occasionally with their use. These consist of marked circulatory changes, flushing, palpitation, precordial pain and violent gastro-intestinal symptoms. Local painful and sloughing reactions may appear at the site of injection. One iron complex for intramuscular use has been employed successfully recently.¹⁹ However, it should be noted that such a preparation not only may cause skin changes at the site of injection lasting several months, but its use may be associated with hypersensitivity reactions. If a patient's supposed iron deficiency anemia does not respond to oral therapy, a reevaluation of the cause is the next logical step and not the administration of large amounts

parenterally or the use of "shotgun" preparations. There is only a very small group of patients who profit more from parenteral than from oral administration.^{2, 11}

And now a few words on severe toxicity seem indicated. In the majority of fatal cases due to iron ingestion, death has been ascribed to extensive necrosis of the intestinal mucosa. However, occasionally autopsy may not reveal such striking morphological changes.²⁰ In experimental animals large amounts cause profound metabolic aci-

dosis.²¹ Presumably conversion to and insolubility of the ferric form as well as an increase in organic acids even before circulatory and respiratory failure contribute to the acidosis. In such animals marked changes have been observed in the lungs with capillary dilatation, diapedesis and hemorrhage. This suggests that similar pulmonary changes in children dying of iron intoxication are not due to aspiration of vomitus as has been assumed previously, but are due to the toxic effects of excessive sudden iron deposition in the tissues.

Conclusion

It should be emphasized that if diagnosis and therapy are correct a reticulocyte response should occur within two weeks. The rate of increase of hemoglobin may be as

much as 0.2 gram per cent a day, and in the absence of complications, the hemoglobin level should be close to normal range in the following six weeks.

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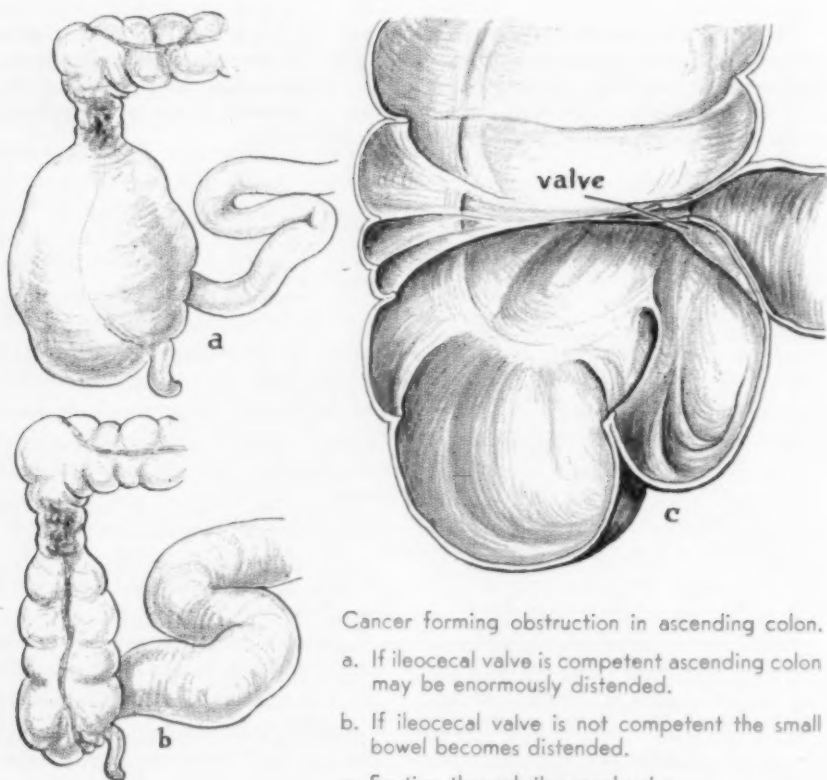
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c. Section through ileocecal valve.

Pyogenic Infections of the Skin

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The pus producing microorganisms causing cutaneous infections are not numerous, principally the staphylococci and streptococci, both the hemolytic and non-hemolytic types, either singly or in symbiosis. These organisms are conveniently termed the pyogenic bacteria since their presence in the skin is associated with an outpouring of polymorphonuclear leukocytes and the process of suppuration.

The more common strains of bacteria we have isolated from cutaneous pyogenic infections are of various types:—

Staphylococcus aureus (hemolytic, coagulase-positive)

Streptococcus hemolyticus

Streptococcus and *Staphylococcus* (miscellaneous strains)

Aerobacter aerogenes

Escherichia coli

Para coli

Proteus

Pyocyanus

Impetigo Vulgaris This is the most superficial of pyogenic infections and comprises an acute inflammatory reaction in the superficial epidermis. It is featured by the formation of rounded, circinate and polycyclic, confluent seropurulent bullae on a slightly inflamed

base. These heal without pigmentation or scarring. Not infrequently the disease is conveyed to the hands, especially in children, where it may cause paronychia. When occurring on the scalp or bearded region it is commonly complicated by folliculitis giving rise usually, but not necessarily, to adenopathy.

Etiology Impetigo is more common in the summer and in children, especially those of unclean habits. It is of common occurrence on the neck, ears and shoulders due to scratching in head louse infestation. In itching dermatoses such as scabies, pediculosis, eczema, dermatitis herpetiformis, herpes simplex and insect bites, impetigo often occurs as a complication. The eruption is then said to be "impetiginous" or "impetiginized."

The exciting cause of impetigo is either staphylococci or streptococci. The disease is readily communicable, being conveyed by hands, towels, shaving brushes, etc.

Treatment Being a local infection, the treatment is topical. In no instance

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is there any indication for internal medication. Removal of the crusts with plenty of soap and water or one of the milder synthetic detergents is essential. Avoid green soap as it is too drying, chaps the surrounding healthy skin and opens new avenues for infection. If the crusts are extremely adherent, some diluted hydrogen peroxide dabbed on, or oil compresses, will help loosen them. Pat the skin dry with disposable paper towels.

Although a 2 to 5% ammoniated mercury ointment or 1% solution of gentian violet have for years been standard remedies they have been more or less superseded by the broad spectrum antibiotics, preferably neomycin, bacitracin and polymyxin B ointments. Erythromycin should be avoided in mild infections and as a constituent of ointments. It has been shown that in most cutaneous infections a combination 0.5% neomycin sulfate and 500 units of bacitracin per gram of ointment base is better than either alone.

In secondarily impetiginized dermatoses, treatment is essentially the same, except in some, such as eczema, the use of soap may be contraindicated. In this case oil compresses, or wet dressings of physiological saline solution or a 10% urea solution will serve to loosen and soften the crusts. In these dermatoses combinations of the sulfonamides by mouth often prove useful but should be given only in short courses of not over 5 to 10 days.

Ecthyma Ecthyma, a term derived from the Greek meaning "pimple," is an acute, inflammatory affection, featured by development of isolated, flat, ulcerating, crusted pustules, followed by pigmentation and soft, flat cicatrices.

The onset is not unlike impetigo, but

there is more redness; small, yellowish ulcerations later developing, which coalesce and spread peripherally. In a few days these are covered by a purulosanguineous crust and are tender on pressure.

Palpation about the lesion shows it to be infiltrated and small droplets of thick pus exude from its depths. Under appropriate treatment, healing gradually occurs, leaving a soft, oval, cigarette-paper-like cicatrix which, for a while, may be pigmented and seldom exceeds a quarter dollar in size.

Etiology While common in children, ecthyma also occurs in adults, especially in those of unclean habits and in those whose nutrition is poor. The exciting cause is usually an hemolytic streptococcus alone, or in symbiosis with a staphylococcus. Trauma from scratching, especially in pediculosis, and minor injuries causing small breaks, abrasions and excoriations of the skin which are neglected, are responsible for the disease in most patients. Ecthyma may complicate impetigo and like the latter is auto- and hetero-inoculable. It must be differentiated from the pustular syphilid, gumma (which leaves a similar pigmented scar), bromoderma and dermatitis factitia.

Treatment This is similar to that recommended for impetigo, except in addition, broad spectrum antibiotics or penicillin may be given parenterally. Precipitated sulfur ointment (10%) liberally applied after removal of all crusts is often superior to all other remedies. Additional attention should be paid to the general health and personal hygiene. The many instances of so-called "jungle rot" reported in troops in humid tropical stations, during the last war, were instances of ecthyma compli-

cating insect bites in the presence of vitamin C deficiency.

Streptococcal Dermatitis This tissue reaction to the streptococcus differs from impetigo in its depth of involvement. What biochemical or humoral deviation from normal determines that an individual develop this type of dermatosis in contradistinction to ecthyma is unknown. It may be on a topographical basis. Probably all cases are caused by a non-hemolytic streptococcus, thus differing from impetigo in which the streptococcus is of an hemolytic variety. The location of streptococcal dermatitis is usually in intertriginous areas, as behind the ears, under the breasts, in the axillae, etc., although it may be found on other areas. In the active stages streptococcal dermatitis is quite characteristic, and unlike impetigo there is no vesiculation. The surface of the lesion is red, glazed and covered with a copious serous exudate. There is usually some infiltration and, in the flexures, a central fissure. A goodly proportion of cases of so-called retroaural seborrheic dermatitis and perleche are actually examples of streptococcal dermatitis.

Treatment consists of avoidance of soap and water, cleansing with oil. In the inflammatory types, roentgen ray therapy is helpful. In the exudative and fissured cases, a 5% coal tar paste is of value. Sulfur and ointments such as Pragmatar, so useful in seborrheic dermatitis, should be avoided. Vioform in ointment or cream may be useful. Other topical remedies include 3-5% silver nitrate in 20% alcohol, 1% brilliant green and 2% aqueous iodine. Broad spectrum antibiotics, especially bacitracin and neomycin may be promptly curative. They can be applied as oint-

ments, except in the groins and axillae where ointments are not well tolerated. Solutions are preferable. Sometimes 2% pyrogallol in a weak alcoholic solution, painted on the lesion twice daily is also beneficial. This is especially true in streptococcal perleche. The prolonged use of neomycin, one of the most effective antibiotics for topical application, in intertriginous areas may result in localized cutaneous moniliasis. As a prophylactic it has been suggested that 0.01% of gentian violet be added to a 0.1% solution of neomycin sulfate. A commercially available neomycin-bacitracin ointment (Mycitracin) contains a moniliosstatic agent.

In secondarily infected eczema, contact and atopic dermatitis, a combination neomycin (0.5%)-bacitracin (500 units per gm) ointment or a neomycin-bacitracin-polymyxin B ointment may be used initially. If improvement is not apparent within a week a Terramycin (3%)-polymyxin B (0.1%) ointment or an erythromycin (0.5%)-neomycin (0.5%) ointment may be used.

Generally it is advantageous to give systemic treatment with tetracyclin, oxy-tetracyclin or a sulfonamid.

The Folliculitides The most superficial of these is designated "Bockhart's impetigo." It is an ostiofolliculitis, a superficial follicular, punctate pustular eruption involving that part of the hair follicle lying within the epidermis. The sebaceous gland itself does not participate in the process. It occurs in any hairy area, and is more common in men on the scalp, beard, thighs and forearms. Clinically, one sees superficial, rounded pustules, pierced by hairs, varying in size up to a split pea, each surrounded by a faint reddish areola. There is no preceding vesicular

stage as in the common impetigo.

The exciting cause is *Staphylococcus pyogenes albus* and *aureus*, and the disease is precipitated by local irritants such as tars, oils, paraffins, carbon, massage creams and ointments. Not infrequently it spreads more deeply and causes furuncles and carbuncles.

Treatment Without doubt the most effective therapy is Dalibour water dabbed on the area 10 or 12 times daily. I use a modified Dalibour water prepared as follows:—

Copper sulfate	0.1
Zinc sulfate	0.5
Alcohol	20.
Camphor water to	100.

Cleansing of the area with soap and water three or four times a day will facilitate treatment.

Brilliant green (1% aqueous) or hot fomentations of 1-5000 bichloride of mercury are also useful. Vaccines are valueless and antibiotic ointments are but slowly effective since the lesion is located in the entire depth of the epidermis.

Suppurative Folliculitis The most annoying type of folliculitis is popularly designated sycosis vulgaris, sycosis barbae, folliculitis barbae or barber's itch. This is an acute or chronic affection, chiefly on the bearded portion of the face, and characterized by papules and pustules, each pierced by a hair. It tends to occur in patches and involves the entire pilosebaceous follicle.

The onset is gradual. While occurring predominantly on the bearded areas, sycosis may occur in the eyebrows, and occasionally on the scalp, especially in the nuchal region and on the neck, axillary and pubic regions. On the face it may be confined to one area, such as the chin or upper lip. Initially the

lesions are discrete; later they coalesce to form patches suggestive of eczema, but differing from it in being confined to the hairy region. On the upper lip, sycosis is often preceded by or accompanied by a chronic nasal discharge, the relief of which is a prerequisite to permanent cure. In this location considerable erythema and edema accompany the follicular pustules and the condition may actually be a manifestation of infectious eczematoid dermatitis.

Subjective symptoms vary. There is burning, smarting and occasionally itching, especially after shaving.

Etiology In the majority of cases, *Staphylococcus pyogenes albus* is the invading microorganism but many other types of staphylococcus have been isolated. Certain individuals seem predisposed and suffer repeated attacks. It is usually confined to the age group from 20 to 40 and preceded by a mild dermatitis from shaving, overexposure to the sun, irritating lotions, dust and dirt. On rare occasions septic foci of infection in the sinuses or tonsils, dental root abscesses and the like are basically responsible.

Prognosis The prognosis must be guarded. If patients with sycosis are going to recover quickly and permanently they usually do so after a few weeks therapy. Not infrequently some are seen who, notwithstanding treatment, have suffered from the disease for many years. Usually there is no permanent loss of hair, but in rare instances there may occur localized areas of deep destructive involvement resulting in scarring and alopecia. This type is called lupoid sycosis and is a consequence either of a particularly virulent microorganism or poor resistance on the part of the host.

Treatment Internal therapy with the sulfonamids, antibiotics, vaccines, tin, colloidal manganese, bacteriophage, or antiviral are usually without substantial value. The various antibiotics when given parenterally may be temporarily helpful in some individuals but in a disease of this nature our initial approach to therapy should be by use of topical medications. Removal of foci of infection and attention to the patient's general health and state of nutrition are essential in chronic and recalcitrant cases.

Local Treatment Fractional roentgen ray therapy should be tried but if response to a half dozen doses is not apparent it should be stopped. Grenz rays are of no value, and ultraviolet radiation only tends to aggravate the disease. One of the most satisfactory applications is Compound Quinolone ointment. It may be diluted to half strength and be gently massaged into the skin twice daily after washing. While it may cure many cases in a short time, recurrences are common. These may be prevented by use of the ointment in full strength two or three times weekly.

If there is much inflammation and the process extensive, hot compresses of 3% boric acid solution or 1:5000 hot aqueous bichloride of mercury for a few days is usually very effective. In some cases Dalibour water as recommended for Bockhart's impetigo is curative. It is often helpful to mechanically remove each hair from its follicle, subsequently painting the entire area with 1% brilliant green dissolved in 25% alcohol. In the pubic and axillary regions 5% xeroform in calamine lotion is soothing and curative.

Broad spectrum antibiotic ointments

as neomycin and bacitracin often constitute a cleanly and effective type of treatment, although in many instances afford only temporary relief. Their constant and repeated use may lead to allergic sensitization so only those which are not customarily given internally, as neomycin, bacitracin or polymyxin B in ointment form should be applied. A most satisfactory ointment of this type consists of 500 units of bacitracin and 10,000 units of polymyxin B in petrolatum. It should be applied hourly. Commercially this is available as Polysporon Ointment. If a shake lotion is better tolerated, neomycin sulfate (0.1%) may be incorporated in calamine lotion.

The problem of shaving is often distressing. Paradoxically patients do better if the hair is kept clipped close to the skin. This can be done by using a sharp razor and not shaving "against the grain" nor too closely. Shaving implements may be soaked in a 1:1000 Zephiran solution or potassium mercuric iodide, and rinsed well before use. Many patients with a tendency to syphilis are relieved by discontinuing the use of their safety razor and relying on the professional barber. Some are helped by use of the electric shaver, although contrary results are not uncommon.

Pyogenic Paronychia This simple but often recalcitrant infection, although well known as a clinical entity poses a difficult therapeutic problem. First it is essential that a search be made for other foci of infection on the patient's skin, such as impetigo, ecthyma, furuncle, etc. The disease is common in cooks, housewives, dishwashers and bartenders. While most cases are due to staphylococci, others are caused by *Candida* or *E. coli* or streptococci of low virulence. If there is a history of

recurrent paronychia, an evaluation of the patient's nutrition is advisable, especially as regards vitamin deficiency, hypochromic anemia and diabetes. Washing dishes, preparing fruits and vegetables and salads is interdicted. Topically the daily application of 3% chrysarobin, dissolved in chloroform, gently worked around the base of the nail, pushing the cuticle back by means of a few strands of absorbent cotton wound around the blunt end of an orange wood stick will result in subsidence of pain and cure within a few weeks. Iodine, 2% in xylol may be used in the same way but is not as effective. Fractional doses of superficial x-rays are also helpful. Mycostatin is of no value in paronychia due to *Candida*, either topically or internally.

Furuncle Time does not permit a detailed discussion of the etiology and clinical history of furunculosis. Most cases are caused by *Staphylococcus pyogenes aureus*. Furuncles in unusual locations often require special care. Occurring on the upper lip they are dangerous and should receive conservative treatment. Incision should be avoided, trauma and squeezing interdicted, and absolute immobilization of the area insisted upon. Intramuscular injections of penicillin in doses of 600,000 units daily should be given until all active inflammation has subsided.

Furuncles of the ear, located in the external auditory canal, are intensely painful long before suppuration. Systemic analgesics may be necessary. Locally, hourly instillations of alcohol, or a wick saturated with diluted Burow's solution may be inserted, and heat applied by means of hot fomentations. Penicillin should be given as recom-

mended for furuncle of the upper lip. When and if the lesion points, a small incision should be made and the pus removed every few hours, a moistened wick of dilute Burow's solution or boric acid (3% in 50% alcohol) being kept in the canal.

In the event of recurrence, vaccines may be given and instillations of the following twice daily.

Penicillin G (crystalline) 100,000 units
Glycerin 6. cc
Physiologic saline solution to 100.

or bacitracin 200 units per cc. of distilled water or an aqueous solution of neomycin sulfate, 0.1%.

Furunculosis of the axillae, under the breasts and about the genitals is referred to as "hidradenitis suppurativa" as it is an infection of the apocrine sweat glands and adjacent tissue. It is more common in young adults, particularly the obese, is often extremely chronic and recurrent. The invading microorganism is a staphylococcus but there is apparently a wide range of virulence since some cases respond promptly, while others require radical procedures to achieve a permanent cure.

Treatment varies, depending on intensity and extent of the infection. If only a few glands are involved, and only a few abscesses present, the administration by mouth of broad spectrum antibiotics and lightly filtered x-rays to the entire area in doses of 150-300 r, repeated in two or three weeks is usually sufficient to control the condition. The antibiotics are more effective for this purpose than the sulfonamids. In some instances, especially when the disease is associated with a severe cystic acne of the face, chest and back, diethylstilbestrol internally may be helpful.

If these procedures are not successful the abscesses may be injected with an appropriate antibiotic, determined by sensitivity tests. In general, in chronic infections of this type, these are preferable to penicillin. If facilities are not available for doing sensitization tests, a solution of neomycin sulfate (0.1%) may be injected.

When the disease is extensive and

fails to respond to these measures; and when it is severe, with communicating, discharging sinuses, complete excision followed by a full thickness skin graft is highly successful. In the perianal area, excision of all infected glands en masse, allowing the wound to granulate, is sometimes advisable.

104 East 40th Street

Clini-Clipping

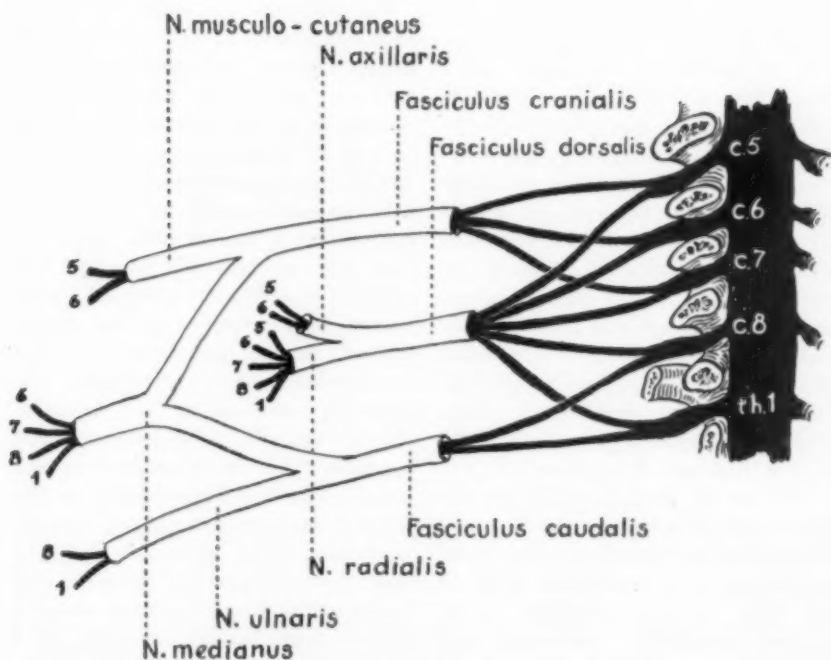


Diagram of components of Brachial Plexus showing relation of roots to nerves.

Treatment of Obesity

With D-Amphetamine Hydrochloride and Amobarbital

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The only satisfactory treatment for simple obesity is a reduction in caloric intake. All any drug can do is to assist the patient in accomplishing this objective. The interest in anorexogenic agents lies in their ability to suppress the appetite. Therefore, they are valuable as treatment adjuncts. It is a well established fact that most cases of simple obesity are due to the ingestion of food calories in excess of the daily requirements. Treatment should consist of prescribing a low caloric diet. However, most obese patients will not adhere to a strict dietary regimen for a sufficient period to effect the desired weight loss. For this reason, anorexogenic drugs have been found to be great aids in the dietary treatment of the obese.

The use of dextro-amphetamine for the purpose of reducing weight in obese individuals has focused attention on the mechanism of this therapeutic effect. It has been variously attributed to increased metabolism, restlessness and sleeplessness, enhanced muscle tone and activity, water loss through diuresis,

diminished gastrointestinal digestion or absorption, or diminished appetite.¹

The extensive and definitive experiments of Harris et al.² on dogs and human subjects, subsequently corroborated by others, have elucidated the mechanism of amphetamine-induced loss of weight. These investigators demonstrated that amphetamine, under carefully controlled conditions, can produce or facilitate a loss of body weight in dogs and in obese and nonobese humans. The weight loss is caused almost entirely by a reduction in food intake and only in small measure by a variable increase in total energy metabolism. The voluntary reduction in food intake is due to diminution in appetite or desire for food. That this situation is caused by an action of amphetamine on the brain is indicated by the fact that denervation of the alimentary tract in dogs does not alter the anorexia produced by the drug. The food intake of patients with bulimia occurring after frontal lobotomy is not decreased by the dose of amphetamine which causes

anorexia in normal subjects. So potent is the drug in producing anorexia, that when it is given to dogs one hour before the daily meal, the food is refused, even though it is offered for 45 minutes; this procedure, when repeated daily, results in almost complete starvation in some animals.

Experiments in man indicate oral amphetamine sulfate decreased olfactory acuity and the acuity of sense of taste

(for sucrose). It is possible that the effectiveness of the drug in producing anorexia may be related, in part, to its ability to depress the acuity of these special senses.³⁻⁴

The toxic effects of the amphetamines are usually extensions of the therapeutic actions of the drug. Most prominent among the signs and symptoms are those due to cerebral actions of amphetamine . . . Restlessness, dizziness, increased re-

Table I

CASE #	CLINICAL				
	AGE	HEIGHT	SEX	DIAGNOSIS	DURATION
1	58	63	F	Simple Obesity	10 years
2	17	62	F	Simple Obesity	2 years
3	25	62	F	Simple Obesity	5 years
4	44	64	F	Simple Obesity	5 years
5	57	66	F	Simple Obesity	2 years
6	52	63	F	Simple Obesity	1 year
7	46	65	F	Simple Obesity	4 years
8	16	61	F	Simple Obesity	2 years
9	28	69	F	Simple Obesity	5 years
10	17	62	F	Simple Obesity	2 years
11	47	69	M	Simple Obesity	3 years
12	60	63	F	Simple Obesity	3 years
13	35	63	F	Simple Obesity	10 years
14	45	74	M	Simple Obesity	3 years
15	39	66	F	Simple Obesity	2 years
16	38	63	F	Simple Obesity	1 year
17	29	67	F	Simple Obesity	4 years
18	67	67	M	Simple Obesity	3 years
19	44	65	F	Simple Obesity	2 years
20	47	62	F	Simple Obesity	4 years
21	30	63	F	Simple Obesity	5 years
22	39	68	F	Simple Obesity	6 years
23	40	65	F	Simple Obesity	5 years
24	17	66	F	Simple Obesity	2 years
25	35	61	F	Simple Obesity	5 years
26	38	60	F	Simple Obesity	2 years
27	41	61	F	Simple Obesity	4 years
28	46	63	F	Simple Obesity	6 years
29	49	63	F	Simple Obesity	2 years
30	43	63	F	Simple Obesity	1 year
31	64	68	F	Simple Obesity	5 years
32	46	63	F	Simple Obesity	4 years
33	49	62	F	Simple Obesity	4 years
34	52	63	F	Simple Obesity	3 years
35	29	72	M	Simple Obesity	4 years
AVERAGES:	40.8	64.4	4 Males 31 Females		3.7 years

flexes, tremor, insomnia and irritability. These may be ameliorated by one of the barbiturates—preferably one of the intermediate acting compounds. Further-

more, the barbiturates uniformly tend to decrease the tone of the gastrointestinal musculature and the amplitude of rhythmic contractions as measured in

Table 2

CASE #	INITIAL WEIGHT	AFTER 2 WEEKS	AFTER 4 WEEKS	AFTER 6 WEEKS	AFTER 8 WEEKS
1	210	203	200	196	190
2	154	150	Stopped		
3	158	154	150	146	141
4	179	174	169	165	162
5	165	160	156	152	148
6	201	196	191	186	181
7	178	174	170	166	167
8	198	194	Stopped		
9	154	151	146	140	138
10	189	184	Stopped		
11	165	160	154	151	147
12	243	239	233	229	227
13	178	174	169	165	161
14	199	195	189	185	180
15	165	161	156	152	152
16	182	175	171	167	162
17	201	197	192	187	181
18	240	236	230	225	222
19	182	177	171	166	162
20	186	181	176	172	168
21	192	187	181	176	171
22	201	196	Stopped		
23	176	172	167	162	158
24	182	177	171	169	165
25	178	173	167	165	161
26	169	165	160	157	153
27	194	190	185	181	176
28	156	152	146	142	141
29	167	162	158	154	152
30	184	180	173	170	167
31	176	172	166	162	159
32	180	175	171	168	165
33	164	160	155	151	148
34	178	173	Stopped		
35	186	182	177	172	170
	(35 cases)		(30 cases Initial Weight)		
AVERAGES:	183.1	178.6	183.		
		AFTER	1 Month 173.3	6 Weeks 169.3	8 Weeks 165.8
AVERAGES	NUMBER CASES	INITIAL WEIGHT	WEIGHT AFTER	TOTAL POUNDS LOST	
2nd Week	35	183.1	178.6	4.5	
4th Week	30	183.0	173.3	9.7	
6th Week	30	183.0	169.3	13.7	
8th Week	30	183.0	165.8	17.2	

vitro in experimental animals and man. Amobarbital is well suited for this type of therapy. It is one of the intermediate acting compounds, which, due to exhaustive clinical studies, is therapeutically well understood.

This study was undertaken to determine the degree of weight loss induced by dextro-amphetamine *hydrochloride*, together with amobarbital in timed disintegration capsules. A further purpose

was to determine the degree of untoward reactions induced by the medication and to discover whether there is failure of the timed disintegration factor in the capsules. The acid addition salts of dextro-amphetamine contain active dextro-amphetamine in accord with the molecular weights. The hydrochloride contains 90% d-amphetamine and the sulfate 74% d-amphetamine. Therefore, for the same dosage the hydrochloride

Table 3

CASE #	REACTION TO MEDICATION DOSAGE	REACTION
1	1 capsule each morning	Favorable
2	1 capsule each morning	Extreme nervousness, weepy, headaches, Stopped after 2 weeks.
3	1 capsule each morning	Favorable, more pep.
4	1 capsule each morning	Favorable
5	1 capsule each morning	Favorable, more pep.
6	1 capsule each morning	Favorable
7	1 capsule each morning	Favorable, more pep.
8	1 capsule each morning	Extreme nervousness, stopped after 2 weeks.
9	1 capsule each morning	Favorable
10	1 capsule each morning	Extremely nervous, stopped after 2 weeks.
11	1 capsule each morning	Favorable
12	1 capsule each morning	Favorable
13	1 capsule each morning	Favorable, less tired.
14	1 capsule each morning	Favorable
15	1 capsule each morning	Favorable
16	1 capsule each morning	Favorable
17	1 capsule each morning	Favorable
18	1 capsule each morning	Favorable
19	1 capsule each morning	Favorable
20	1 capsule each morning	Favorable
21	1 capsule each morning	Favorable
22	1 capsule each morning	Extremely nervous, weepy, stopped after 2 weeks.
23	1 capsule each morning	Favorable
24	1 capsule each morning	Favorable
25	1 capsule each morning	Favorable
26	1 capsule each morning	Favorable
27	1 capsule each morning	Favorable
28	1 capsule each morning	Favorable
29	1 capsule each morning	Favorable
30	1 capsule each morning	Favorable
31	1 capsule each morning	Favorable
32	1 capsule each morning	Favorable
33	1 capsule each morning	Favorable
34	1 capsule each morning	Very nervous, stopped after 2 weeks.
35	1 capsule each morning	Favorable

is therapeutically more active. Also, it is more soluble. For these reasons, a preparation containing d-amphetamine hydrochloride and amobarbital was selected.

Each timed disintegration capsule* (timed for disintegration and absorption over a period of 5 to 10 hours) contained:

D-amphetamine hydrochloride 15 mg.
Amobarbital 60 mg.

Clinical Material Clinical material was gathered from the practice of two physicians. All cases were ambulatory. The group used consisted of cooperative patients who were able to continue the medication to the end of the test. All had simple obesity. The average age was 40.8 years, the average height 64.4 inches. There were four male and 31 female patients in the group. The average duration of obesity was 3.7 years. (See Table 1.)

Procedure Each patient in the group was examined to determine whether there were any conditions which would contribute to the problem of obesity control. All cases of glandular origin, such as myxedema, etc., were eliminated. Only those with simple obesity of dietary origin were selected. In every case the heart, blood pressure and cardiovascular system were normal. During this study each patient continued on a *personal low* calorie diet. There was no medical supervision of the dietary regimen.

Each patient was instructed to take 1 capsule every morning. Every two weeks patients reported for additional examination including determination of weight.

* (The product used was Timed Amoxed Capsules, Testagar & Co., Inc., Detroit, Michigan.)

The initial weight of the group of 35 cases was 183.1 pounds. After two weeks treatment the weight was 178.6 pounds, a loss of 4.5 pounds. See Table 2.

After four weeks of treatment there were 5 cases showing extreme nervousness after treatment was begun. These cases were dropped from the group. The average initial weight for the remaining 30 cases was 183.0 pounds. After two weeks treatment this group averaged 173.3 pounds, a total loss of 9.7 pounds.

After six weeks treatment, this group showed an initial weight of 183.0 pounds, averaged 169.3 pounds at the end of the period, or a total loss of 13.7 pounds.

At the end of eight weeks treatment the group averaged 165.8 pounds, a total loss of 17.2 pounds.

Dosage and Response to Medication

Specific Effects An untoward response, in the form of extreme nervousness, was shown by cases 2, 8, 10, 22, and 34. These cases were discontinued after two weeks treatment.

All other cases showed a favorable response. Of those showing a favorable response, there were four cases reporting they had a great deal more energy and were less tired. See Table 3.

Summary

No. of Cases Particularly Favorable Response	No. of Cases of Favorable Response	No. of Cases Untoward Response (stopped after 2 weeks.)
4	26	5

RATE OF LOSS PER WEEK INTERVALS

2 weeks	4.5 pounds
4 weeks	5.2 pounds
6 weeks	4.0 pounds
8 weeks	3.5 pounds

Conclusions

Patients with simple obesity have extreme difficulty in adhering to well balanced low calorie diets which produce the desired reduction in body weight. This study demonstrates the possibilities of obtaining satisfactory clinical results *without* rigidly prescribed diets. The daily administration of

one (1) Timed Disintegration Capsule containing d-amphetamine hydrochloride 15 mg. and amobarbital 60 mg. produced a total loss of 17.2 pounds in the eight week treatment period. This is a satisfactory weight loss, an average, for this large number of cooperative patients.

CASE HISTORIES

Case 1, age 58 years, height 63 inches, female, who had been overweight for the past 10 years. The physical examination was essentially negative. The initial weight was 210 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 203 pounds, a loss of 7 pounds. After one month her weight was 200 pounds, a loss of 10 pounds.

After continuing for 6 weeks the weight was 196 pounds, a loss of 14 pounds.

She weighed 190 pounds, a total loss of 20 pounds, at the end of 2 months.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examination, before and after treatment, was negative and unchanged.

Case 2, age 17 years, height 62 inches, female, who had been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 154 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 150 pounds, a loss of 4 pounds. At this time she complained of extreme nervousness and the medication was stopped.

There were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after medication, were negative and unchanged.

Case 3, age 25 years, height 62 inches, female, who had been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 158 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 154 pounds, a loss of 4 pounds.

After one month the weight was 150 pounds, a loss of 8 pounds.

After continuing for 6 weeks the weight was 146 pounds, a loss of 12 pounds.

She weighed 141 pounds, a total loss of 17 pounds after 2 months.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 4, age 44 years, height 64 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 179 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 174 pounds, a loss of 5 pounds. After one month the weight was 169 pounds, a loss of 10 pounds.

After continuing the same regime for 6 weeks, she weighed 165 pounds, a loss of 14 pounds.

She weighed 162 pounds at the end of

two months, a total loss of 17 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 5, age 57 years, height 66 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 165 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 160 pounds, a loss of 5 pounds.

After one month the weight was 156 pounds, a loss of 9 pounds.

After continuing the same regime for 6 weeks the weight was 152 pounds, a loss of 13 pounds.

She weighed 148 pounds at the end of 2 months, a total loss of 17 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule to work as expected. Urine examinations, before and after treatment, were negative and unchanged.

Case 6, age 52 years, height 63 inches, female, who has been overweight for the past year. The physical examination was essentially negative. The initial weight was 201 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 196 pounds, a loss of 5 pounds.

After one month the weight was 191 pounds, a loss of 10 pounds.

After continuing the same regime for 6 weeks the weight was 186 pounds, a loss of 15 pounds.

She weighed 181 pounds at the end of 2 months, a total loss of 20 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule to work as expected. Urine examinations, before and after treatment, were negative and unchanged.

Case 7, age 46 years, height 65 inches, female, who has been overweight

for the past 4 years. The physical examination was essentially negative. The initial weight was 178 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of 2 weeks she weighed 174 pounds, a loss of 4 pounds.

After one month the weight was 170 pounds, a loss of 8 pounds.

After continuing the same regime for 6 weeks the weight was 166 pounds, a loss of 12 pounds.

She weighed 167 pounds at the end of 2 months, a total loss of 11 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 8, age 16 years, height 61 inches, female, who was overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 198 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 194 pounds, a loss of 4 pounds. At this time she complained of extreme nervousness and the medication was stopped.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 9, age 28 years, height 69 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 154 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 151 pounds, a loss of 3 pounds.

After one month the weight was 146 pounds, a loss of 8 pounds.

After continuing this regime for 6 weeks the weight was 140 pounds, a loss of 14 pounds.

She weighed 138 pounds at the end of 12 months, a total loss of 16 pounds.

Re-examination revealed no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examination, before and after treatment, was negative and unchanged.

Case 10, age 17 years, height 61 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 189 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 184 pounds, a loss of 5 pounds. At this time the patient complained of extreme nervousness and the medication was stopped.

Re-examination revealed no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examination, before and after medication, was negative and unchanged.

Case 11, age 47 years, height 69 inches, male, who has been overweight for the past 3 years. The physical examination was essentially negative. The initial weight was 165 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks he weighed 160 pounds, a loss of 5 pounds.

After one month the weight was 154 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 151 pounds, a loss of 14 pounds.

He weighed 147 pounds at the end of 2 months, a total loss of 18 pounds.

Re-examination revealed no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examination, before and after treatment, was negative and unchanged.

Case 12, age 60 years, height 63 inches, female, who has been overweight for the past 3 years. The physical examination was essentially negative. The initial weight was 243 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 239

pounds, a loss of 4 pounds.

After one month the weight was 233 pounds, a loss of 10 pounds.

After continuing this regime for 6 weeks the weight was 229 pounds, a loss of 14 pounds.

She weighed 227 pounds at the end of 2 months, a total loss of 16 pounds.

Re-examination revealed no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examination, before and after treatment, was negative and unchanged.

Case 13, age 35 years, height 63 inches, female, who had been overweight for the past 10 years. The physical examination was essentially negative. The initial weight was 178 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 174 pounds, a loss of 4 pounds.

After one month the weight was 169 pounds, a loss of 9 pounds.

After continuing the regime for 6 weeks the weight was 165 pounds, a loss of 13 pounds.

The weight at the end of 2 months was 161 pounds, a total loss of 17 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 14, age 45 years, height 74 inches, male, who was overweight for the past 3 years. The physical examination was essentially negative. The initial weight was 199 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks he weighed 195 pounds, a loss of 4 pounds.

After one month the weight was 189 pounds, a loss of 10 pounds.

After continuing the regime for 6 weeks the weight was 185 pounds, a loss of 14 pounds.

He weighed 180 pounds at the end of 2 months, a total loss of 19 pounds.

There were no untoward effects due to

the failure of the time disintegration factor of the capsule. Urine examinations, before and after medication, were negative and unchanged.

Case 15, age 39 years, height 66 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 165 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 161 pounds, a loss of 4 pounds.

After one month the weight was 156 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 152 pounds, a loss of 13 pounds.

There was no further loss of weight and at the end of two months the weight was 152 pounds, a total loss of 13 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 16, age 38 years, height 63 inches, female, who had been overweight for the past year. The physical examination was essentially negative. The initial weight was 182 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 175 pounds, a loss of 7 pounds.

After one month the weight was 171 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 167 pounds, a loss of 15 pounds.

She weighed 162 pounds at the end of 2 months, a total loss of 20 pounds.

Re-examination showed there were no untoward effects which were attributable to the failure of the time disintegration factor of the capsule to work as expected. Urine examinations, before and after treatment, were negative and unchanged.

Case 17, age 29 years, height 67 inches, female, who has been overweight for the past 4 years. The physical exam-

ination was essentially negative. The initial weight was 201 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 197 pounds, a loss of 4 pounds.

After one month the weight was 192 pounds, a loss of 9 pounds.

After continuing on this regime for 6 weeks the weight was 187 pounds, a loss of 14 pounds.

She weighed 181 pounds at the end of 2 months, a total loss of 20 pounds.

Re-examination showed there were no untoward effects which were attributable to the failure of the time disintegration factor of the capsule to work as expected. Urine examinations, before and after treatment, were negative and unchanged.

Case 18, age 67 years, height 67 inches, male, who has been overweight for the past 3 years. The physical examination was essentially negative. The initial weight was 240 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks he weighed 236 pounds, a loss of 4 pounds.

After one month the weight was 230 pounds, a loss of 10 pounds.

After continuing this regimen for 6 weeks the weight was 225 pounds, a loss of 15 pounds.

He weighed 222 pounds at the end of 2 months, a total loss of 18 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 19, age 44 years, height 65 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 182 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 177 pounds, a loss of 5 pounds.

After one month the weight was 171 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 166 pounds, a loss of 16 pounds.

She weighed 162 pounds at the end of 2 months, a total loss of 20 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 20, age 47 years, height 62 inches, female, who has been overweight for the past 4 years. The physical examination was essentially negative. The initial weight was 186 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 181 pounds, a loss of 5 pounds.

After one month the weight was 176 pounds, a loss of 10 pounds.

After continuing this regime for 6 weeks the weight was 172 pounds, a loss of 14 pounds.

She weighed 168 pounds at the end of 2 months, a total loss of 18 pounds.

There were no untoward effects which were attributable to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 21, age 30 years, height 63 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 192 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 187 pounds, a loss of 5 pounds.

After one month the weight was 181 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 176 pounds, a loss of 16 pounds.

She weighed 171 pounds at the end of 2 months, a total loss of 21 pounds.

There were no untoward effects which could be attributed to the time disintegration

factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 22, age 39 years, height 68 inches, female, who has been overweight for the past 6 years. The physical examination was essentially negative. The initial weight was 201 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 196 pounds, a loss of 5 pounds. At this time the patient complained of extreme nervousness and the medication was stopped.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 23, age 40 years, height 65 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 176 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 172 pounds, a loss of 4 pounds.

After one month the weight was 171 pounds, a loss of 9 pounds.

After continuing this regime for 6 weeks the weight was 162 pounds, a loss of 14 pounds.

She weighed 158 pounds at the end of 2 months, a total loss of 18 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 24, age 17 years, height 66 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 182 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 177 pounds, a loss of 5 pounds.

After one month the weight was 171 pounds, a loss of 11 pounds.

After continuing this regime for 6 weeks the weight was 169 pounds, a loss of 13 pounds.

She weighed 165 pounds at the end of 2 months, a total loss of 17 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 25, age 35 years, height 61 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 178 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of 2 weeks she weighed 173 pounds, a loss of 5 pounds.

After one month the weight was 167 pounds, a loss of 11 pounds.

After following this regime for 6 weeks the weight was 165 pounds, a loss of 13 pounds.

She weighed 161 pounds at the end of 2 months, a total loss of 17 pounds.

Re-examination showed that there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 26, age 38 years, height 60 inches, female, who has been overweight for the past 2 years. The physical examination was essentially negative. The initial weight was 169 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of 2 weeks she weighed 165 pounds, a loss of 4 pounds.

After one month the weight was 160 pounds, a loss of 9 pounds.

After following this regimen for 6 weeks the weight was 157, a loss of 12 pounds.

She weighed 153 pounds at the end of 2 months, a total loss of 16 pounds.

Re-examination showed that there were

no untoward effects which could be attributable to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 27, age 41 years, height 61 inches, female, who has been overweight for the past 4 years. The physical examination was essentially negative. The initial weight was 194 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 190 pounds, a loss of 4 pounds.

After one month the weight was 185 pounds, a loss of 9 pounds.

After following this regimen for 6 weeks the weight was 181 pounds, a loss of 13 pounds.

She weighed 176 pounds at the end of 2 months, total loss of 18 pounds.

Re-examination showed that there were no untoward effects which could be attributable to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 28, age 46 years, height 63 inches, female who has been overweight for the past 6 years. The physical examination showed essentially negative. The initial weight was 156 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 152 pounds, a loss of 4 pounds.

After one month, the weight was 146 pounds, a loss of 10 pounds.

After following this regimen for 6 months, the weight was 142 pounds, a loss of 14 pounds.

She weighed 141 pounds at the end of 2 months, a total loss of 15 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after medication, were negative and unchanged.

Case 29, age 49 years, height 63 inches, who has been overweight for the past two years. The physical examina-

tion was essentially negative. The initial weight was 167 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 162 pounds, a loss of 5 pounds.

After one month the weight was 158 pounds, a loss of 9 pounds. After following this regimen for 6 weeks, the weight was 154 pounds, a loss of 13 pounds.

She weighed 152 pounds at the end of 2 months, a total loss of 15 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after medication, were negative and unchanged.

Case 30, age 43 years, height 63 inches, female who has been overweight for the past year. The physical examination was essentially negative. The initial weight was 184 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 180 pounds, a loss of 4 pounds.

After one month the weight was 173 pounds, a loss of 11 pounds.

After following this regimen for 6 weeks, the weight was 170 pounds, a loss of 14 pounds.

She weighed 167 pounds at the end of 2 months, a total loss of 17 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations, before and after medication, were negative and unchanged.

Case 31, age 64 years, height 68 inches, female, who has been overweight for the past 5 years. The physical examination was essentially negative. The initial weight was 176 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 172 pounds, a loss of 4 pounds.

After one month the weight was 166 pounds, a loss of 10 pounds.

After following this regimen for 6

weeks the weight was 162 pounds, a loss of 14 pounds.

She weighed 159 pounds at the end of 2 months, a total loss of 17 pounds.

Re-examination showed there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 32, age 46 years, height 63 inches, female who has been overweight for the past 4 years. The physical examination was essentially negative. The initial weight was 180 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 175 pounds, a loss of 5 pounds. After one month the weight was 171 pounds, a loss of 9 pounds.

After following this regimen for 6 weeks the weight was 168 pounds, a loss of 12 pounds.

She weighed 165 pounds at the end of two months, a total loss of 15 pounds.

Re-examination showed there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after treatment, were negative and unchanged.

Case 33, age 49 years, height 62 inches, female, who has been overweight for the past 4 years. The physical examination was essentially negative. The initial weight was 164 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 160 pounds, a loss of 4 pounds.

After one month, the weight was 155 pounds, a loss of 9 pounds.

After following this regimen for 6 weeks, the weight was 151 pounds, a loss of 13 pounds.

She weighed 148 pounds at the end of 2 months, a total loss of 16 pounds.

Re-examination showed there were no untoward effects which could be attributed to the time disintegration factor of the capsule. Urine examinations, before and after

Case 34, age 52 years, height 63 inches, female, who has been overweight for the past 3 years.

The physical examination was essentially negative. The initial weight was 178 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of two weeks she weighed 173 pounds, a loss of 5 pounds. At this time the patient complained of extreme nervousness and the medication was immediately stopped.

There were no untoward effects due to the failure of the time disintegration factor of the capsule.

Urine examinations, before and after treatment, were negative and unchanged.

Case 35, age 29 years, height 72

inches, male who has been overweight for the past 4 years. The physical examination was essentially negative. The initial weight was 186 pounds. The diagnosis was Simple Obesity.

The patient was instructed to take one capsule each morning before breakfast. At the end of 2 weeks he weighed 182, a loss of 4 pounds.

After one month, the weight was 177 pounds, a loss of 9 pounds.

After following this regimen for 6 weeks, the weight was 172 pounds, a loss of 14 pounds.

He weighed 170 pounds at the end of 2 months, a total loss of 16 pounds.

There were no untoward effects due to the failure of the time disintegration factor of the capsule. Urine examinations showed negative and unchanged before and after treatment.

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150 Woodruff Avenue

Clini-Clipping



Multiple polyposis in the transverse splenic flexure and descending colon. Specimen is suspended to show size and length of polyps. (after Bacon)

Genetics and The Red Cells

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The purpose of this paper is to review some of the clinical states in which the erythrocytes of certain individuals differ from the normal throughout life, to discuss the means of transmission of these abnormalities and some modern methods of their investigation and to appraise their importance to the clinician, geneticist and anthropologist. The red cells may be studied from the standpoint of abnormalities in shape as well as from that of the electrophoretic properties of the hemoglobin molecule.

Electrophoretic Abnormalities

New techniques have revealed the existence of a number of types of hemoglobin of different electrophoretic mobility which separate from one another as they migrate along filter paper. No standard method for electrophoresis exists but any method calls for considerable technical dexterity and careful attention to the many small details of experimental conditions necessary to produce consistent results. The stained pattern on the filter paper separating one type of hemoglobin from another is usually sufficiently clear to give a qualitative diagnosis of the types of hemo-

globin present in the specimen but sometimes it is necessary to convert the curves to quantitative estimates. This is neither simple nor accurate. A densitometer may be used to measure the amount of light passing through the strip and a curve produced from the measurements or, alternatively, the different parts of the strip may be cut out with scissors and immersed individually in sodium hydroxide solution so that the amount of eluted dye may be measured colorimetrically.

In studying the relationship between the sickling phenomenon and the degree of oxygenation of the red cell, Pauling (1949) discovered the existence of the molecular specificity of the hemoglobin in sickle cell disease. He related the chemical to the morphological findings and described sickle cell anemia as a "molecular disease." The interesting concept that weaknesses in molecular structure bring about distortion in the shape of the cell is now fairly well accepted.

From the Journal Club Conferences, New York University-Bellevue Medical Center Post Graduate Medical School, New York, N. Y.

In subsequent years, a number of other hemoglobins have been described so that a whole new nomenclature is growing up. In January, 1953 the Hematology Study Section of the Division of Research Grants of the National Institute of Health agreed upon a uniform though elastic nomenclature which has been generally adopted. Alphabetic preference is given in the order of publication of the discovery of the hemoglobin types except where a descriptive initial letter is used. Thus normal adult hemoglobin becomes hemoglobin A, fetal becomes F and sickle-cell hemoglobin becomes S. In 1953, hemoglobins C and D were available for classification with the others. Since that time, more have been added, namely hemoglobin E, hemoglobin G and hemoglobin H. A lively world-wide search to discover new hemoglobins is now well under way.

Hemoglobins, S, A, C and D can all occur in normal individuals. When found, they are always found in one or both parents. All the available evidence suggests that their existence is determined by allelic genes, so that no patient is found who has more than two of these types of hemoglobin. The only way in which a person might conceivably have more than two hemoglobins would be when one of them was hemoglobin F. This is the predominate hemoglobin of the fetus, which normally takes up to one year to disappear. Its production is probably controlled by a different genetic mechanism which produces a blockage of the normal path of synthesis of hemoglobin A. This same blockage appears to exist in patients with thalassemia.

Abnormal hemoglobins may be present in homozygous or heterozygous

forms. The latter form is spoken of as "trait" for the particular hemoglobin and in general gives rise to little or no clinical effect, whereas the homozygous state is usually accompanied by a definite disease state. Cases are also being studied where two abnormal factors both exert their effect in the same patient simultaneously as, for example, in the "sickle cell-hemoglobin C disease."

The importance of the heterozygous states is of greater value to the geneticist than the clinician. Inheritance of hemoglobins is much simpler than in the case of, say, skin pigmentation or diabetes mellitus and the investigator is at a great advantage because the presence, (or *absence*) of the carrier state may be demonstrated emphatically with negligible inconvenience to the person studied. There is already enough knowledge available to be of value in cases of disputed paternity, and certain eugenic implications of the work are inescapable.

Sickle Cells Sickle cell anemia is a chronic hereditary anemia characterized clinically by frequent thromboses, hemolytic crises, cardiac hypertrophy and ulcers of the leg. The patient manifests the condition from shortly after birth. The hematological findings are consistent with a hemolytic process and the diagnosis is finally established by the finding of hemoglobin S by electrophoresis.

Other members of the families of these patients are said to have the sickle cell trait; their blood shows the sickling phenomenon but they are clinically normal. The relationship between the two states has been carefully studied by Neel (1951). The evidence he obtained from a large number of families gave rise to the now generally accepted concept that the anemia is due to the homozygous

condition whereas the trait is due to the heterozygous state. With certain exceptions, both the parents and all the children of an individual with sickle cell anemia will show sickling. If an individual does not show the sickling trait, then neither of his parents and none of his children will have sickle cell anemia. Other generalizations of this kind with regard to the sickle cell trait can be made with equal certainty on the basis of Neel's theory. It is possible that the few exceptions which he reported were explicable either by errors in parentage (a weakness of any genetic study) or by the fact that there may have been an admixture of the then unknown hemoglobin C trait. This will be discussed.

Hemoglobin C The existence of hemoglobin C (then called hemoglobin III) was first demonstrated by Kaplan *et al.* (1951). In the course of a study of the sickle cell trait they discovered a hemoglobin of much slower electrophoretic mobility. When this occurred in conjunction with normal hemoglobin A (hemoglobin C trait) there was no disease, but when it was combined with hemoglobin S there was a clinical picture of chronic, mild anemia with splenomegaly and the indications of increased red cell hemolysis. This explained how an individual could suffer from what appeared to be a mild form of sickle cell anemia when only one of the parents showed the sickling trait.

From the facts emerging from this study, it was possible to surmise that a homologous hemoglobin C disease might exist. This suspicion was entirely vindicated, for a number of patients have now been discovered to have the homologous endowment. These individuals have been investigated by Schneider

et al. (1954), Singer *et al.* (1954) and Ranney (1954). Homologous hemoglobin C disease is characterized by a chronic hemolytic state. The patient may lead a relatively normal life or else he may be dogged by a chronic feeling of fatigue. The central hematological fact is the shortened life of the erythrocyte; this may be as low as 20 days. In consequence there is enlargement of the liver and spleen, raised serum bilirubin, increased output of urobilinogen and constant reticulocytosis. Target cells are frequent and may number as many as 40%. It is a curious fact that fetal hemoglobin (F) is not found in hemoglobin C disease though it is by no means uncommon in sickle cell anemia.

Thalassemia Thalassemia is the name given to a group of conditions affecting people living on the shores of the Mediterranean and their descendants. It includes most of the entities assembled by Chini *et al.* (1949) under the title Mediterranean Hemopathic Syndromes. Neel *et al.* (1947) have shown that the condition is genetically determined and that, as in the case of hemoglobin C and hemoglobin S syndromes, there exist both heterozygous and homozygous conditions. The action of the gene seems to be to perpetuate the production of hemoglobin F which normally is suppressed at the end of the first year of life. As already stated, the gene is not an allele of the genes for A, C and S hemoglobin but appears to segregate separately from them and be a modifier of their activity.

Thalassemia Major, the homozygous condition, is characterized by anemia, splenomegaly and iron deposited in the viscera. There is hypochromia with severe anisocytosis and poikilocytosis

and frequent target cells. The disease usually ends fatally in early childhood. The bony deformities of this condition are interesting not only to the clinician but also to the anthropologist since similar findings in the skeletons of Peruvian Incas and Mexican Aztecs prompts the speculation that a genetically determined anemia may have contributed to the downfall of these once powerful peoples.

Thalassemia Minor is a less serious condition in which the red cells are extremely mis-shapen and ovalocytes and target cells are common. There is no hemolytic process but a mild microcytic hypochromic anemia is frequent.

The differentiation of thalassemia into these two groups, however, is by no means as clear-cut as in the case of hemoglobins C and S. Many patients present conditions of greater or less severity than thalassemia minor. There is variation in the expression of the gene in different individuals.

Combination of Thalassemia with Hemoglobins S and C Cases occur where the thalassemia gene is present in addition to the gene for S or C. The effect of thalassemia on the sickle cell trait is to produce a more severe sickling tendency; the syndrome is known as microdrepanocytic disease. Zuelzer *et al.* (1954) describe a man whose father had hemoglobin C trait while his mother had thalassemia. The patient suffered from a hypochromic microcytic anemia which could not have been produced by the hemoglobin C trait alone and which was not present in the father. Over 70% of the patient's hemoglobin was of the A type and he had less than 2% of type F.

Hemoglobin D Little is known about hemoglobin D. It has been found

father and mother and one brother show in families with hereditary hemolytic anemia. On filter paper electrophoresis it occupies the same site as hemoglobin S from which it is distinguishable by differential solubilities in phosphate buffer (Itano, 1951)

Hemoglobin E Chernoff *et al.* (1954) described hemoglobin E in a number of patients in Thailand. It has an electrophoretic mobility between that of C and that of S and is apparently inherited in the same way as these two. Its presence is not associated with any symptoms or abnormal findings and so far the homozygous condition has not been described. It has been found in association with hemoglobin F as Mediterranean—hemoglobin E disease, a mild hemolytic syndrome which is slightly more severe than thalassemia minor.

Hemoglobin G Hemoglobin G has been reported in an African living in the Gold Coast (Edington *et al.*, 1954). It was found in a routine survey of bloods in a male patient who did not show sickling. This type of hemoglobin has an electrophoretic mobility between that of hemoglobins F and S. So far, no family studies are available.

Hemoglobin H Rigas *et al.* (1955) reported the existence of a hemoglobin whose electrophoretic mobility was faster than that of normal adult hemoglobin. To this they gave the name of hemoglobin H. Their patients were Chinese, a brother and sister who presented with severe hypochromic, microcytic anemia indistinguishable in stained smears from thalassemia. Both patients had splenomegaly and complained of persistent fatigability. Little of the case, though it is noteworthy that the family history is as yet available in this

normal patterns. The relationship of the two patients suggests a genetic background to the formation of hemoglobin H but the fact that the parents are normal suggests that the genetic mechanism is quite distinct from those seen with other abnormal hemoglobins.

Hemoglobin I The most recently reported hemoglobin also has an electrophoretic mobility faster than that of hemoglobin A. It has been described in a Negro family by Rucknagel *et al.* (1955) who consider that this hemoglobin I is due to the presence of a gene which is another allele of the one for hemoglobin A. So far, only the heterozygous form has been discovered.

Elliptocytosis Elliptocytosis or ovalocytosis is usually little more than a biological curiosity. It occurs in families of widely differing racial origin. It is interesting in that it conforms to Mendelian laws but fortunately it is almost always devoid of severe clinical manifestations. Gausch *et al.* (1949) showed that transmission was by a simple autosomal dominant and described a family in which the erythrocyte anomaly was accompanied by a tendency to telangiectasia. Wyant *et al.* (1941), reviewing a large number of their own cases as well as those in the literature, showed that the elliptocytes function well and do not appear to be at any disadvantage in comparison with normal cells. The homozygous state does not appear to differ from the heterozygous, though Wyant *et al.* describe a marriage occurring between persons with elliptocytosis in which the only one of the children examined very probably suffered from a mild hemolytic process. The suggestion has been made that the existence of elliptocytosis is an atavistic phenomenon. Mammals (with

the exception of the camel) have round erythrocytes without nuclei whereas the rest of the vertebrates have oval, nucleated cells. The difference appears to be trivial from the point of view of the body's economy, for there exist two very closely related species of salamander, one of which has the mammalian pattern and the other the reptilian. It is interesting to note that, although there is an obvious difference in the shape of the elliptocytes, it has not so far been possible to demonstrate any chemical or electrophoretic anomaly of its hemoglobin.

Acanthocytosis Singer *et al.* (1952) have investigated a very curious case to which they give the name of acanthocytosis in view of the thorny appearance of the erythrocytes in the smear. Bassen and Kornzweig (1950) describe the same condition in a brother and sister. Certain points are common to both reports; acanthocytosis occurs in the offspring of consanguineous Jewish marriages, it is associated with other anomalies (progressive neuropathy, retinitis pigmentosa, celiac disease) and the erythrocytes are irregular and crenated and bear coarse projections resembling pseudopods. There appears to be no active hemolytic process demonstrable and the osmotic fragility is decreased while the mechanical fragility is increased. So far, no abnormality of the hemoglobin has been demonstrated. The disease appears to be transmitted by a recessive gene. The parents of the patients described have not shown any hematological abnormality.

Relationship Between Chemical Composition and Morphology Crosby (1942) has some interesting reflections on the pathogenesis of differences in shape of erythrocytes. He

points out that the conception of the erythrocyte as a simple envelope must be discarded. In fact the surface of the cell consists of an intricate framework of lipoprotein and hemoglobin which may extend 0.5μ into the interior of the cell and occupy 50% of its volume.

In view of the association of hemoglobin C with target cells and hemoglobin S with sickle cells, it is tempting to believe that the molecular abnormality morphology. Studies of crystals of hemoglobin S show that when oxygen tension is lowered, rearrangement takes place in the molecule so that their alignment is altered.

It is this new alignment which causes the cell to sickle. Furthermore it is noted that in sickle cell trait or anemia in the infant sickling does not take place until fetal hemoglobin has been replaced by hemoglobin S.

On the other hand, the hemoglobin abnormality is not necessarily sufficient to cause cell distortion. Target cells are found in hemoglobin C disease but they

are also found in certain types of liver disease where the hemoglobin is normal. That the malformation of the cells is due to a humoral factor is suggested by the fact that transfused red cells also take on the target form in these instances of liver disease. No chemical or electrophoretic specificity of the hemoglobin molecule has yet been demonstrated in ovalocytosis or in acanthrocytosis where the red cells are so very obviously abnormal in shape.

The reasons why some erythrocyte dyscrasias are associated with hemolytic disease are by no means clear. It was believed that the shape of the sickled red cell was responsible for the hemolysis of sickle cell anemia but in homozygous hemoglobin C disease it is almost certainly the abnormal hemoglobin which is the basis of excessive cell breakdown. Young *et al.* (1951) have shown that the spleen is important in the destruction of the red cells of hereditary spherocytosis and believe that it is their abnormal width that allows the red cells to be dealt with in this way.

Summary

Brief mention has been made of a number of clinical conditions in which abnormalities of the red cells are clearly due to genetic factors. The modes of inheritance of these factors differ widely between the various syndromes but in many instances it has been shown that the Mendelian laws are followed. Abnormalities in the hemoglobin molecule may be related to morphological anomalies but in the present state of knowledge it is not often possible to demonstrate any close correspondence between these two features of the cell. Both structural and chemical anomalies are very

frequently associated with a shortened erythrocyte survival, that is to say a hemolytic process. The factors controlling this association are almost entirely obscure, though it is noteworthy that in many instances the hemolytic process is active only when an abnormal gene is present in the homozygous state. There is good evidence that the genes for hemoglobins A, C, D and S are alleles but that other abnormal genes associated with the red cells segregate separately. Fetal hemoglobin is produced when there is interference in the production of normal hemoglobin. The gene for

thalassemia suppresses the formation of hemoglobins A, C and S in favor of the production of hemoglobin F. In the causation of ab-

normalities of structure of the red cell, however, other influences than heredity have to be taken into account.

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AN EXERCISE IN DIAGNOSIS— THE CASE REPORTS

IN addition to our regular quota of original articles, "Refresher" articles and departments, this issue, and every issue, contains selected Case Reports from the Clinico-Pathological Conferences at New York University-Bellevue Medical Center. You will find them on pages 315-320. We recommend these studies as interesting and stimulating.

Impotence

Report of a Series of 67 Cases Using Glukor — A Fortified Pituitary Gonadotropin

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Impotence is essentially a man's disease and may be the only condition that may make him feel he is getting older. Inability to have sexual relations can be very depressing, and change completely one's outlook on life.

A man's impotence can seriously affect his wife. She can be vitally disturbed. Marital bliss can be disrupted. One of the most pitiful cases I know is a forty-five-year-old virgin who had been married twelve years to a man fifteen years her senior. Fortunately, this case was subsequently helped by Glukor, an injectable administered to her husband and herein described.

Impotence in the younger man is not uncommon and may result from a variety of causes. Tragedy almost occurred when a 27-year-old girl and a 34-year-old man were told not to get married by a consultant psychiatrist because of the man's inability for over eight years. They were married nevertheless, and he had no trouble whatsoever. Three normal children have been their reward, so far. Love apparently did the trick. It is not uncommon to find a man impotent with one woman but potent with another.

A dramatic case was described in one of my earlier papers,¹ of the 38-

year-old impotent man with Froehlich's syndrome. He simply "detested" women. After four months of Glukor therapy he came in to the office with a girl for premarital blood tests. As long as he took Glukor he remained potent, and his effeminate traits were minimized.

In the past, treatment of impotence frequently has been a slow drawn-out procedure, which was uncertain as to outcome and discouraging to even the most patient patient. Now, a dramatic process has been developed—dramatic in the sense that results are faster and more likely to be successful.

Treatment with the more widely used hormones such as testosterone frequently lasted several months to a year with questionable success, but with Glukor, excellent results have been obtained within one to fourteen days.

A Fortified Steroid Glukor has been used previously for treatment of the male climacteric and male senility.¹ Recent study has indicated its value in the treatment of the impotent patient, per se, or associated with such pathology as angina pectoris, coronary heart disease, cardio-renal-vascular disease or prostatitis. Glukor is a steroid, containing in one cc., chorionic gona-

dotropin 200 i.u., thiamine chloride 25 mg., L (+) glutamic acid 52.5 ppm. 1 percent procaine hydrochloride. It is administered intramuscularly.

Impotence This study consisted of 67 men with impotence treated with Glukor and observed over a period of two months to six years. Cases were of varying degree, from the "I cannot satisfy my wife any more" type to those with complete inability for several years.

Two cases of oligospermia of seven years duration are described. Patients included businessmen, a merchant seaman, electrical supervisor, professional men and mechanics. It is interesting to note that 68% of the cases were "brain workers." Each case had previously undergone treatment with testosterone, either orally or by hypodermic, without satisfactory results. The cases were divided into two groups. Thirty-four in Group 1 received ten placebo injections with no positive response. Thirty-three in Group 2 received ten Glukor injections with satisfactory results as described below. Following this, Group 1 was placed on Glukor with similar positive response. Further control was evaluated in 37 cases where treatment was carried on over a year. In these latter, there was recurrence of impotence after varying periods of abstinence of three weeks to four months. Reinstitution of the therapy readily benefited the patients.

In this study, a thorough physical examination was given to each patient and a detailed medical history was recorded. Following definite diagnosis of impotence, each patient was injected with 1 cc. of Glukor, twice weekly. Duration of treatment ranged from two months to six years.

RESULTS

Satisfactory results were obtained in 85%, that is, 57 patients, even from the first, but usually by the third to tenth injection. Ten cases showed no significant response.

Duration of Effect Equally important as the speed of the results is how soon the effects will wear off. This varies, of course, with each patient. In most patients, Glukor's initial effect lasted for several days and consequently had to be administered two times weekly. Usually after giving it two months twice weekly, effectiveness was maintained indefinitely by one weekly injection. After ten to twenty injections, some patients could stay away for months at a time. On the other hand, in the most stubborn cases 2 c.c.'s were given three times weekly, until there was satisfactory response. There is another distinct advantage to Glukor. Whereas it is required that testosterone be given frequently for a long time, many months, and some cases a year or more before definite results are seen, the effects with Glukor are prompt. After three to ten injections of four weeks of therapy, if some effectiveness is not seen, the medicament need not be continued. Because results with Glukor are so readily seen, patients are more likely to continue with even long time therapy if it is necessary.

Safety Careful observation was made of each patient. There was never an untoward side effect regardless of pathology, and even among patients who had taken Glukor for as long as six years. In this respect it is superior to testosterone. In this study and in previous studies¹, Glukor was given to men from the ages of 28 to 101 with no ill effects.

Case Histories J.S., age 49, electrical supervisor. Impotence of two years duration, stating that he had infrequent intercourse and unsatisfactory erections. He also complained of tiredness, lack of endurance, nervousness and irritability. After one injection of 1 cc. of Glukor, there was a prompt reaction of euphoria followed by slight sexual improvement. After the third injection, impotence was eliminated. During the next two months, Glukor was administered twice weekly and for the next two and one-half months once weekly. During this time, sexual activity was satisfactory. Following this four and one half month period, use of Glukor was discontinued for four weeks and a recurrence of symptoms was observed. This was promptly relieved by reinstitution of therapy. The patient continued this treatment for five years with no untoward effects. Several episodes of abstinence of therapy from three weeks to four months and resulting in recurrences, were quickly eliminated as soon as the injection was started again.

E.M., age 67, merchant seaman. Unable to have sexual relations for five years. He suffered from weakness, lack of endurance and myocarditis. After one injection of Glukor, a general improvement was observed. After the eighth injection, he was able to have satisfactory sexual intercourse once or

twice weekly. After three years of treatment symptoms recurred several times when patient abstained from the injection four or more weeks. Reinstitution of therapy brought prompt improvement.

C.B., age 32, businessman. C.B. reported that for six months he had been unable to satisfy his wife in respect to both full ability each time and to frequency. The patient was otherwise in good health. After the third injection of Glukor, satisfactory results were obtained. After two months of bi-weekly injections, patient had to return only occasionally in the next two years. There were, in the study, seven cases of this type, ranging from 28 to 40 years. Six were helped. One was not.

J.R., age 23, mechanic. H. G., age 35, businessman. Both patients were married about seven years during which time they tried unsuccessfully to have a child. Both had been diagnosed and treated by urologists periodically for four to five years for oligospermia. After 22 injections of Glukor administered twice weekly, the businessman's wife became pregnant; after 33 injections, the mechanic's wife became pregnant. Both women had normal, full terms deliveries. The businessman's wife subsequently gave birth to another child. No additional Glukor was administered to either patient after the initial series.

Conclusion

This study indicated that Glukor is the drug of choice in treating impotence and that it was effective in 85% of 67 cases. It has been clinically demonstrated to be three times more effective than testosterone, and much more prompt in

its action! It has been shown in this study and in others, that regardless of pathology there is no contraindication to the administration of Glukor and no untoward effects from prolonged use of this drug.

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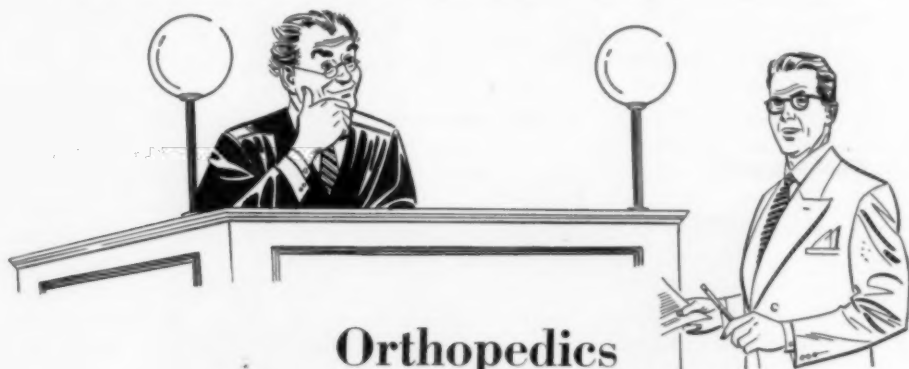
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453 Western Avenue

Clini-Clipping



Comparative views of middle fingers, showing: a. normal x-ray; a'. normal exterior; b. x-ray of rheumatoid arthritis illustrating narrowing of joint space; b'. exterior of fusiform swelling at proximal interphalangeal joint; c. x-ray of hypertrophic arthritis illustrating Heberden's nodes at terminal phalangeal joints, also loss of cartilage in terminal phalangeal joints; c'. exterior of Heberden's nodes.



Orthopedics and the Law

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Every physician and surgeon should be familiar with the legal principles that pertain to malpractice suits involving orthopedics. Since he is licensed to practice medicine, the physician is presumed by law to have as much skill and learning as the average member of his profession in the community in which he practices, and that he has applied that skill and learning with ordinary and reasonable care to those who come to him for treatment. Before he can be held liable for damages, it must be proved that he departed from the standard of medical practice in the community and that the injury complained of was a direct result of that departure. Therefore, a physician is not required to produce a favorable result in all

cases, so long as he exercised his skill and learning and treated the patient with ordinary care. Nor will he be held liable for an honest error of judgment.

The negligence of a physician must be proved by the testimony of another physician to the effect that the treatment did not measure up to the standard of practice in the community. It is of no legal import that the other physician testifies that he would have treated the patient differently. Expert testimony by another physician is not required, however, in cases where negligence is so obvious that even a layman would have no difficulty in recognizing it.

Causal Relation Between Negligence and Injury A physician may have been negligent, and a patient may

show that he was injured in the course of treatment, but the patient can recover damages only if he proves that the negligence was the direct cause of the injury.

A patient injured in an auto accident was brought unconscious to a hospital late at night and was given routine treatment by the nurses and an interne. Early the next morning the attending physician found the patient immobilized by means of sand bags placed around his head. The physician's provisional diagnosis was cerebral concussion which he changed several hours later to cervical fracture and cord injury. The patient was further immobilized by a roll under his shoulders and administered sedation. The physician decided that no x-rays were to be taken because he decided to have the patient moved to a second hospital where the facilities were better and he felt that moving the head to take x-rays would be unwise in view of the cord injury.

At the second hospital two spinal punctures were made and a block in the spinal cord was found. The head was placed in halter traction. About two months later a laminectomy was per-

formed and it was found that the spinous process of the sixth cervical vertebra was loose and unattached and the bone fragment was removed.

Up to the time of trial, the patient suffered generalized paralysis, with constant burning sensations in both lower extremities. He was able to move his arms and left wrist but not the right. He had no control of his bowels and urination and wore an inner catheter. The patient sued the first attending physician for damages.

The court held that the patient failed to produce evidence that showed a causal connection between the alleged negligence of the physician and the patient's condition. The case was therefore dismissed as inadequate to go to the jury for consideration.

The court disposed of the patient's claim of negligence against the physician in the following manner. The incorrect provisional diagnosis of cerebral concussion was corrected within a few hours and no harm resulted from it. There was no dispute concerning the reasonableness of not taking x-rays under the circumstances. While the physician from the second hospital testified that a spinal puncture should have been taken sooner, there was no evidence introduced to show that had it been done, any other but the prescribed treatment would have been indicated. Although the patient claimed he was not properly immobilized, the evidence showed that he was immobilized by sandbags in the first hospital. The second physician stated that, although he put the patient in "halter" and subjected him to skeletal traction by the use of the Crutchfield tongs, he would not criticize the first physician for not using mechanical traction since he knew the patient was going



to leave the hospital the same day.¹

Hospitalization Failure to hospitalize a patient when standard medical practice in the community requires it may lead to a charge of improper treatment.



A thirteen year old boy was brought to the physician with fractures of both bones of the forearm. The end of the radius penetrated the skin and the epiphysis protruded into the palm of his hand. After the mother had inquired whether she should hospitalize the boy the doctor assured her that this was not necessary since the boy could be treated in the office. The mother testified that the physician had cleansed the wound with a disinfectant and then reduced the fracture.

No x-rays were taken and the physician reported that there was a fracture of but one of the bones. He dressed the wound by means of gauze packing and applied a metal splint. The mother further testified that the arm began to swell. The wound became purulent and the boy's temperature continued to rise reaching 104 degrees on the seventh day after the fracture. In the course of the patient's daily visits the physician merely changed the dressing and pre-

scribed morphine to relieve pain and to induce sleep. He assured the mother that the patient was alright and that it was not unnatural for the wound to suppurate.

On the ninth day, because the arm was swollen even as far up as the shoulder, and was cyanotic and the fingers were beginning to appear black, the mother took the boy to another physician who immediately hospitalized him. This physician testified that the patient's temperature was 101.2 degrees at that time and that the appearance of the arm indicated both staphylococcic and streptococcic infection. He therefore operated and inserted a drain for the relief of the suppuration. This physician testified from the hospital record that his diagnosis was "grossly infected left forearm secondary to compound fracture, dislocation of radius and ulna one week earlier."

An expert testifying for the patient stated that it was standard practice to hospitalize in such cases and to x-ray. The probable results of lack of care or hospitalization for a nine-day period are: abscess formation, generation of gas, gas bacilli, general infection involving veins, muscles and nerves or possibly osteomyelitis. The jury awarded the boy \$2,500.²

X-Rays The nature of the specific case determines the need for x-rays. However, failure to do so when it is appropriate according to the practice in the community may be considered evidence of careless treatment. Thus, physicians have been judged negligent when they didn't (1) take adequate x-rays in their initial diagnosis, (2) read and interpret the x-rays properly, or (3) take x-rays after reduction of the fracture.

A physician who was treating a patient with a back involvement stood by in the hospital as one anterior-posterior x-ray was taken of the 4th and 5th lumbar vertebrae and the pelvis. The machine was not equipped to take the lateral view. The patient was discharged with the assurance that there was nothing wrong.

After a period of continuing pain, the patient entered another hospital where a lateral view x-ray disclosed a rather obvious compression fracture of the third lumbar vertebra. A spinal fusion was performed, as a result of which the patient's second, third, fourth and fifth lumbar vertebrae were left permanently rigid. The physician's assistant admitted in his testimony that the pain the patient complained of and the nature of his fall created a suspicion of compression fracture. When that is the provisional diagnosis a lateral view x-ray is required. In addition, the court felt that if an x-ray had been taken to include the third lumbar vertebra, the fracture would probably have been discovered. The physician was held liable for failing to take adequate x-rays.³

By means of x-rays a diagnosis of a transverse fracture of the upper third of the femur was made. However, the physician failed to note an additional fracture of the neck of the femur. The fracture was reduced and a cast applied and after six weeks the patient was advised to walk. Since the patient complained of pain, an extension ring was placed around the thigh. The physician later removed the ring and again advised the patient to walk but because the pain continued he referred the patient to a specialist. The latter noted the unrecognized fracture of the neck of the femur. He tried inserting a bone peg

to join the bony parts but didn't succeed. Another specialist later performed a fairly successful reconstructive operation. The patient sued the first physician and won \$6,000.⁴

The importance of the x-ray *after* reduction is demonstrated by the following case of a five year old girl who fractured her humerus near the elbow. The physician x-rayed the fracture and then reduced it. Three weeks later the mother complained concerning the appearance of the arm, but the physician did not x-ray it again. Five weeks later upon the repeated insistence of the mother he did. The mother later sued the physician for misangulation of the child's arm. An expert testified that post-reduction x-rays must be timely taken in this kind of fracture for control of the position of the fragments. The physician was found to be negligent for failing to x-ray for five weeks and to check the progress of the healing of the bone of the arm. The misangulation, in other words, was not caused by a mere error of judgment.⁵

Manipulation A patient sued an osteopathic physician because of a permanent injury to her shoulder, arm and hand, which, she claimed, was caused by his manipulation. This, it was alleged, was started too early and was carried beyond the point of tolerance. The diagnosis of her condition after an x-ray was "epicondyle fracture; transverse fracture of the longitudinal epicondyle." The physician reduced the fracture and applied a cast.

She claimed in court that four weeks after the reduction the physician massaged her arm and flexed her elbows in all directions despite her cries of pain. He repeated the same treatment four times during the following two weeks.

The physician asserted however, that he did not begin the manipulations until six weeks after reduction and stopped each time when the patient complained. The court ruled that the patient made out enough of a case to go to the jury. The physician admitted that manipulation beyond the point of a patient's tolerance is improper osteopathic practice. Thus, if the jury believed the patient's version of the manipulation treatment they would be justified in finding that the physician departed from proper medical practice.⁶

Plates A physician who uses a metal plate to unite the segments of a broken bone may be held liable for any complications that arise if its use or the manner of applying it are found to be improper.

A patient required that his right femur be shortened about two inches to make it conform to his other leg. The physician joined the severed bones with a four-screw metal plate, closed the wound and applied a cast. Ten days later an x-ray showed angulation. The cast was removed, the leg straightened by manual manipulation, and a new cast applied. X-rays then showed that one screw and the plate were loose. About a month after the operation the patient was discharged from the hospital.

Since there was no firm union of the femur, an operation was performed six months later to remove fibrous tissue between the segments of the bone and to replace the four-screw plate with a six-screw plate. The patient developed osteomyelitis which was substantially cured. When he was discharged from the hospital about a month later there was still a slight infection in the wound.

This continued to drain and a foul odor emanated from it. On the advice

of other physicians whom the patient consulted, the defendant-physician operated a third time. He temporarily removed the plate, cleansed the area of overlying tissue, washed it with saline solution, aligned the bones, packed the wound with vaseline gauze and sulfanilamide and left it open to heal in by granulation. The infection then soon cleared and the wound finally healed.

The court decided that there was sufficient evidence of negligence for the case to go to the jury. The doctors who were consulted by the defendant thought it might be desirable to remove the plate to cure the infection. There was testimony that the metal plate could have been an irritant which contributed to the infection. Assuming it was good practice to use a plate in the first place, the angulation, the loosening, the substitution of a larger plate, and the infection associated with the plate, made an issue of negligence. The jury could consider the original choice of the size of the plate, the cause of the loosening, the consequences of changing plates along with the additional borings required in the bone, and the relation of these factors to the infection.⁷

Infection Wounds may become infected along with the best kind of treatment. Therefore, in order for a physician to be held liable for infection it must be proved that he did not follow proper aseptic procedure, or, if he did, that he did so in a careless manner.

A patient, who had suffered a compound comminuted fracture of the leg, claimed that the physician did not cleanse or sterilize the wound. The physician merely cleaned away the blood and applied a closed cast extending from toes to groin. Thereafter, gravel, sand and pus came out from the

top of the cast around the groin. The physician then replaced the cast with another, leaving in it a window through which the wound would be dressed. After two months the patient left the hospital and consulted another physician who operated and removed bone fragments. The patient asserted in his lawsuit that he was the victim of great pain and that his leg is now two inches shorter than the other.

Experts testified that it was improper not to sterilize the wound before applying the cast; that the failure to sterilize an open wound would tend to set up or increase an infection. The defendant physician testified that he did sterilize the wound properly. Because of the conflict in testimony, the court held that a question was presented for the jury. If the jury believes the patient's version, they can properly find the physician guilty of negligence.⁸

Pressure Sores A physician will generally not be liable for pressure sores that develop from the use of a cast unless it is proved that his negligent treatment caused them.

The patient contended that his physician caused a pressure sore to form on his heel, that it became infected and that as a result his toe had to be amputated five months later. The diagnosis was a fracture of the femur where it articulates with the acetabulum. The fracture was set and a Whitman cast applied. But because the patient complained of pain and discomfort, part of the cast was removed and a pressure sore discovered on the heel. The patient introduced no evidence that the treatment was improper.

On the contrary, the evidence indicated that the procedure followed was proper and was carried out with

care. The toes protruded in order to check the circulation which frequent examinations revealed to be good. Furthermore the patient failed to prove that the infection was caused by the sore. The physician won the verdict.⁹

Immobilization No additional injury must be caused by means of the applied immobilization. For example, if a cast is applied too tightly it may cause pressure sores or impair the circulation which may eventually develop into gangrene.

A patient asserted in court that he had suffered a Colle's fracture of the wrist and that, due to the physician's negligent treatment his forearm and hand became deformed and disabled. The court held that the following evidence introduced by the patient was enough for the jury to base an award of damages: it usually takes four to eight weeks for union to occur in this type of fracture; the casts were too tight and severe contracture developed; the prognosis is good in Colle's fracture, with only slight widening of the wrist resulting; the functioning of the hand, wrist and arm are usually unaffected.¹⁰

An orthopedic surgeon was called in by a family doctor to treat a patient's fractures of the tibial plateau of the knee and of the fibular head. He reduced the fractures and applied a cast from mid-thigh to toes. The patient immediately and for three days thereafter complained of pain, inability to move the toes, and demonstrated the bluish color and coldness of the toes. On the third day the physician bivalved the cast. A peripheral vascular specialist was called in and, because of the development of gangrene, two amputations were performed on the leg. An expert, testifying from the hospital records

alone, said that the physician departed from good medical practice in failing to bivalve the cast earlier and that the omission could cut off the circulation and cause the gangrene.

However, the patient introduced no evidence that the cast exerted pressure on the limb or that it was improperly applied, or that there was any swelling of the limb. Further, three attending physicians and four experts testified for the defendant-physician that the gangrene was actually caused by a failure of circulation due to a thrombosis, which, in turn, was caused by damage to the artery during the original injury to the leg. The court, in reversing a judgment for the patient and ordering a new trial, said that in order to win, the patient must introduce evidence that the complications should have been foreseen by the physician and guarded against, and that the failure to bivalve the cast earlier was a direct cause of the gangrene. The court also felt that the award of \$100,000 to the patient and \$25,000 to her husband was excessive and that the jury was moved by sympathy rather than the evidence.¹¹

Another type of damage that may follow treatment of a fracture is ischemic paralysis or Volkmann's contracture. The characteristics of this condition which is caused by impairment of blood circulation, are shrinking and deformation of the hand and arm muscles. A patient, suffering from a fracture of the arm just above the elbow, had his arm set in a "fully flexed" position with a tight bandage. That is, the forearm was taped against the upper arm into a cone-shaped position. Since the hand was blue and cold the mother became alarmed but the physician assured her that everything was in order. The pre-

senting condition was later diagnosed as Volkmann's contracture. An expert testified that, since there was no radial pulse in the arm before reduction of the fracture but that it became noticeable after reduction, the condition was caused by the fracture and not the treatment. He also stated that Volkmann's contracture may be caused by traumatic arterial spasms, thrombosis, embolism, perforation or rupture of a blood vessel, and that in this case it could have resulted regardless of the treatment administered.

Since there was no medical testimony of improper treatment, the patient's case was dismissed.¹²

Aftercare The physician or surgeon who treats a fracture must continue to look after the patient to supervise his recovery and avoid possible complications. The frequency and length of time of such aftercare cannot be prescribed in general, but vary with the needs of each case.

The attending physician of a hospital was liable for a severe pressure sore that formed on the patient's foot. The tendons were exposed and one tendon was especially involved. Three operations were required to cure the condition. The physician failed to visit the patient for a ten day period shortly after reduction of the fracture. The court said that, despite the attention of nurses and other doctors, the attending physician is liable because the lesion might have been halted in time if he had visited the patient more frequently.¹³

A surgeon operated on a patient with a trans-cervical fracture of the neck of the left femur using the Smith-Peterson nail technique. He continued to examine the patient by means of x-rays for a period of four months. A year later

pain appeared periodically in the left hip. The following year the patient reported this to the surgeon, who x-rayed and found early evidence of aseptic necrosis of the left femoral head. He operated and removed the Smith-Petersen nail. The patient then sued the surgeon for failing to provide adequate post-operative care, thereby failing to interrupt the development of necrosis.

Experts for the patient admitted, however, that the procedures followed by the surgeon were proper and that a good bony union had resulted. In addition, an x-ray taken over a year after the first operation showed no evidence of bone pathology. The case was dismissed because the patient did not introduce any evidence of negligence by the surgeon to warrant consideration by the jury.¹⁴

Unfavorable Result Patients frequently sue when their expectations of a cure are not realized. In most cases, however, they do not recover damages unless they convince a jury with the aid of expert testimony that the physician was negligent and that his negligence directly caused the unfavorable result.

A patient sued two surgeons for reducing a fractured humerus in such a manner that the broken ends joined at an angle and left a crook in the arm. The patient won the case after an expert testified that the following acts and omissions by the surgeon showed lack of care: failure to take x-rays of the arm frequently enough to keep advised of the progress of the bony union; failure to read and properly evaluate the x-rays so as to be able to correct the apparent angulation; applying too much traction; failure to maintain traction for a sufficient length of time.¹⁵

In another case, the patient claimed

that the physician applied a cast on her broken leg by twisting her leg in an unnatural position thereby injuring her knee. The case was dismissed because the patient did not introduce any evidence that the treatment by the physician was not proper. Expert testimony indicated that standard procedures had been followed. The court said that it cannot infer negligence from a bad result, for it would be mere conjecture to do so.¹⁶

In other cases, however, where the result deviates grossly, the court may send the case to the jury without the benefit of expert testimony. Thus where a patient had a simple transverse greenstick fracture of the radius it was discovered that five weeks after the cast was removed the arm was crooked and that there was a large mass over the site of the fracture. The court held that, since such a condition is not to be expected from proper treatment of a simple fracture without complications, the case can go to the jury for decision without the necessity for expert testimony.¹⁷

Instructions to Patient A physician must give his patient proper instructions for the care of an injury that has been treated. In one case the jury found that the physician treated a patient's fractured leg properly. However, after the cast was removed and upon discharge from the clinic, the patient was merely told to use his limbs and walk, on crutches. No other instructions were given as to the manner and extent of using the limb. An expert testified that the patient should not have been told to walk on a leg that had not properly united.

The jury decided that the patient had not been correctly instructed

as to the care and use of the leg; that the instructions given were wrong; that the diseased condition of the bone was caused or aggravated by the use of the

leg; that the proper instruction would have saved the leg, or at least the disease of the bone would have been ameliorated.¹⁸

Summary

On the basis of adjudicated cases it can be said that a physician may become liable to a patient for damages if, as a direct result of his negligent treatment, he causes a patient physical harm, pain or suffering, or an additional expenditure of money.

The following acts or omissions in orthopedic practice may be considered grounds for liability:

1. Failure to hospitalize any patient.

2. Failure to take adequate x-rays in diagnosis; failure to interpret them properly; or failure to

x-ray after reduction of fracture.

3. The manipulation of a limb beyond the point of tolerance.

4. Complications resulting from the union of fractured bones by means of metal plates.

5. Infection of the wound.

6. Causing pressure sores by means of the applied cast.

7. Application of too-tight a cast; causing Volkmann's contracture.

8. Inadequate after-care.

9. Obtaining a grossly deviant result.

10. Failure to instruct patient properly.

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133 East 58th Street

Clinico-Pathological Conferences

New York University-Bellevue Medical Center Post
Graduate Medical School, Department Of Medicine at
Bellevue Hospital, Fourth Medical (N. Y. U.) Division

PATIENT G. M.

This is the 1st B.H. admission of a 60-year-old white male; admitted 1/7/53 at 7 p.m. in comatose state with no history.

Physical Examination — T. 103.6°. R.P. 104. B.P. 120/66. R. 36.

A w.d. elderly white male unresponsive to verbal or painful stimuli. Moans occasionally. Breathing unlabored but noisy.

Head EENT: No evidence of recent trauma. No scleral icterus. Conjunctivae—Several petechiae over lower lids. Pupils RRE; react to L & A. *Fundi*—moderate arteriolar narrowing and tortuosity; no hemorrhages or exudate. ??Blurring of left upper disk margin. *Ears*—clear bilaterally. *Tongue*—coated and dry.

Neck: No rigidity; no venous distention.

Glands: No adenopathy.

Lungs: Lungs clear to A & P. Symmetrical chest. Slightly increased AP diameter.

Heart: P.M.I. not felt. Heart enlarged

→MCL. Sounds distant. A2 > P2. Soft apical systolic murmur is heard.

Abdomen: No scars. Liver felt 3 f.b. below RCM. Firm nodular. No other organs felt.

Genitalia: Rectal prolapse with a bleeding, friable fungating mass arising from mucosa. Prostate—rubbery, firm.

Neurological: KJ equal but hypoactive. Negative Kernig and Brudzinski. A.J. absent. Abdominal reflexes absent.

Extremities: Cyanosis nail beds. Extremities cold but no peripheral edema. No clubbing. Poor dorsalis pedis pulse.

Hospital Course—1/8/53. T. 102.4°. B.P. 100/60. P. 120.

(Because of spinal fluid findings, the patient was started on fluids and I.V. Terramycin 500 mgms. stat. & q. 12. Mottling, coldness, and pulselessness noted in left arm below the elbow.)

Nuchal rigidity and positive Kernig's sign this a.m. Aqueous penicillin 500,000 u. q. 3h. Streptomycin 1.0 gms. B.I.D. added to regime.

1/9/53 — General condition un-

changed; T. 100°. Cyanosis of toes now noted. Pulses of feet fair. Stellate ganglion block on left performed without significant effect.

1/10/53—Minimal response to commands. T. 100°. Meningeal signs present. Dry gangrene of left hand and left toe developing. Penicillin raised to 1,000,000 u. q. 3h., as well as Streptomycin.

1/11/53 — Requires Neosynephrine

I.V. to maintain B.P. Condition unchanged. Urine output adequate. T. 101° R.

1/12/53—Gangrene of left great toe and all right toes. Edema rt. foot. Pt. more alert but apathetic. Streptomycin deleted. T. 100.5° R.

1/12-1/15/53 — Slight improvement for 2 days and then sudden rise of T. to 103° R. B.P. 90/60. Patient found dead on a.m. of 1/15/53.

LABORATORY									
Urine									
	S.G.	Alb.	Micro.						
	1.007	1+	Neg.						
Blood									
Date	Hgb.	RBC	WBC	Tr	P	L	M	E	
1/8/53	14.5		13,150		88	12			
1/9/53	14.5	4.47	8,850	47	33	10			
1/12/53			7,650						
1/14/53									Total Eosinophils 25/mm ²
Blood Chemistries									
Date	NPN	CO ₂	Prot. A/G	I.I.	CFT.	Alk. P'tse	Na	K	
1/8/53	69	40 vol. %							
1/9/53			2.7/3.1	10.0	3+	10.1 B.U.	136 mEq/L	4.3 mEq/L	
1/14/53		20 mEq/L					159 mEq/L	4.3 mEq/L	
Spinal Tap									
Date	I.P.	F.P.	Character	Cells	Pandy	Sug.	Smear	Culture	
1/7/53	118 mm. H ₂ O	100 mm. hrs	clear	250/mm ³	neg.	neg.	Gram + cocci	B. Hem.	
1/8/53	55 mm. H ₂ O		cloudy	600/mm ³	4+			Streptococci	
1/14/53	30 mm. H ₂ O		clear	50/mm ³ (35 polys) (15 lymphs)	4+	60 mgm %			
1/14/53 Chlorides—110 mEq/L.									
Meningococcus titer—neg.									
1/14/53—Mazzini neg.									
1/7/53 —Stool guaiac 4+.									
Blood—1/ 7/53)—B. Hem. Strep.									
1/ 8/53)									
1/13/53)									
B. Hem. Strep. sensitive to Penicillin, Terramycin, Aureomycin, Chloromycetin; except moderately sensitive to Streptomycin.									
EKG: 1/9/53—Nonspecific EKG changes in 2, 3, AVF & V6. & Post. wall damage.									
X-Ray of Chest—not read.									

Pathological Findings

At autopsy the heart was mildly hypertrophic (500 gm.) and dilated. Large, friable vegetations were found

on the tricuspid and mitral valves. A small, but otherwise similar vegetation was seen on the aortic valve. An embo-

lus in the left brachial artery was responsible for the gangrene in the left hand.

Infected infarcts were seen in the lung, spleen, and kidneys. Purulent meningitis and necrotizing arteritis were demonstrated in the brain. Histologically, the vegetations were masses of fibrin containing polymorphonuclear leukocytes and bacteria. The underlying valves showed areas of necrosis, acute inflammatory cells, and small quantities of granulation tissue. There was no evidence of pre-existing valvular disease, except for the calcification of the valve bases which is not uncommon in patients of this age group.

The isolation of Beta hemolytic Streptococci left no doubt that the endocarditis in this case was acute. The histologic appearance of the vegetation was consistent with this diagnosis, although appreciable quantities of granulation tissue are more suggestive of subacute endocarditis. Since the advent of antibiotic therapy, however, the appearance of the two forms of bacterial endocarditis has begun to merge. The lack of preexisting valvular disease, of

course, favors the diagnosis of acute bacterial endocarditis.

This patient had probably had his disease for no more than a few weeks. Since he had no evidence of any other type of heart disease, it must be presumed that the cardiac hypertrophy was due to the bacterial endocarditis. Hypertrophy is usually associated with more chronic cardiac disability, but there is electrocardiographic and experimental evidence that increase in heart weight can occur in as short a period as three weeks (1).

The patient had rather severe central necrosis of the liver. This finding is common in patients who have been in shock for more than 12 hours immediately prior to death (2).

An unexpected finding in this case was a moderately large adenocarcinoma of the sigmoid colon. The lesion impinged on the lumen of the bowel, but did not occlude it. No metastases were found.

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PATIENT G. H.

This is the case of a 41-year-old Indian, male, actor.

1st Admission: March, 1953.

Chief Complaint: "Jaundice, bloody sputum and abdominal swelling—2 weeks."

The patient gave a 7-year history of excessively heavy intake of wine and whisky with very poor food intake. He had drunk heavily for 7 months before admission and was arrested because of

failure of support of family. One month before admission, he noted daily nose bleeds and the week before admission developed swelling of the ankles and noted marked generalized weakness. While in jail, he was noted to have jaundice, hepatomegaly, urobilinogenuria and choluria. His jaundice improved on bedrest as did the nose bleeds. Just prior to admission, he had noted black, scyballous stools but he

had been taking iron. He mentioned slight fever daily in recent weeks.

Review of Systems: Chronic cough with postnasal drip.

C.R. No Dyspnea, orthopnea or palpitations. A sinus condition for years.

G.U. Urine dark in recent weeks with diminished volume and frequency. No burning or dysuria; no nocturia.

G.I. Frequent gastric upsets while on alcoholic binges with vomiting of ingested food and bile.

N.M. Neg.

L.I. Neg.

Past History: Patient was in the South Pacific in World War II. No illness aside from one short bout of diarrhea.

Habits: Alcohol as in P.I. Cigarettes—1 package per day.

Family History: Father died of Ca. Prostate.

Physical Examination: T 102 R. P. 98. R 16. B.P. 130/70.

A well-developed Indian male appearing in no distress.

Skin & Mucosa: Spider nevi over chest and upper arm. Mucosa moist and pale. Hair sparse over chest and axillae. Gynecoid pubis.

Head EENT: Tongue papillated with minimal marginal atrophy. Pharynx and nasal mucosa injected with nasal turbinates boggy. Slight tenderness over the maxillary and frontal sinuses.

Glands: No. g.g.e.

Neck: Veins flat. Thyroid normal.

Chest: Increased A.P. diameter. Diaphragms move freely. Liver dullness in 4 R.I. Areolar pigment.

Lungs: Transient medium moist rales in the right base.

Heart: Normal sinus rhythm. No

murmurs. Heart not enlarged. A2 equals P2.

Abdomen: Flanks bulge. Shifting dullness. Venous dilatation evident over the abdominal wall. Liver felt 5 f.b. below the right costal margin, tender, soft. Spleen not felt.

Extremities: 1 plus edema ankles. Dorsalis pedis normal. Palmar erythema.

Neurological: Vibration sense diminished over ankles; present in knees. K.J. and A.J. 1 plus to 0. Upper extremities 1 plus to 2 plus. Babinskis down.

Genitalia: Testicles small but normal.

Rectal: Prostate 2 plus, smooth and firm. No hemorrhoids seen. Brownish pigment in perianal area.

Hospital Course: The patient was placed on bed rest, hi-vitamin, hi-carbohydrate and hi-protein diet with yeast supplementation. Because of daily temperature rise to 101-102.5, the patient was placed on Procaine Penicillin and Neo-Synephrin nose drops with no effect on temperature. A search was made for stool ova and parasites but studies were negative. He received a 1-week course of Aureomycin 2.0 gms./day without effect on temperature. He ate well and felt well. Ankle edema subsided as did the jaundice but when patient signed out A.O.R. on April 30 he was still febrile. During the hospital stay, a spleen was felt by several observers—2 f.b. below the right costal margin, nontender. The left lobe of the liver was markedly tender. No change in liver size.

2nd Admission, July 11, 1953: The patient had continued to run daily fever to 102-103 R! had continued drinking an average of 1 pint of whisky daily (1 quart per day in the week prior to

LABORATORY STUDIES

Urinalysis:									
Date	Color	S.G.	pH.	Alb.	Sugar	Acetone	Bile	Urobil.	Micro.
3/18	Yellow	1.016	Alk.	Neg.	Neg.				Occ. hyaline cast Occ. W.B.C.
3/19							1	1:40	
3/20							1		
3/22							1		
3/23							0		
3/24							0		
3/25							0		
3/30		1.020			Neg.		0	1:20	
4/1 to 4/20							0	1:10-1:40	

Blood												
Date	Hgb.	RBC	WBC	Tr	P	L	M	E	B	ESR	HCT	Increased
3/18	10.5	4.2	10.0	11	66	14	4	5	0	51	33	Platelets, Hypochrom Polychrom.
3/18	10.0											
7/11	9.0	4.33	3.95	22	54	19	5	0	0	41	34	
7/20	9.5	3.93	6.35	19	63							Target cells
8/6	9.5	3.92	3.2									
8/16	9.5											

Chemistries											
Date	Prot. Time	Phosph.	Sugar	NPN	CO ₂	A/G	Chol/Est.	I.I.	CFT	Alk.	P'tase
3/18	15 secs.		3.9			3.9/3.5	281/146	20	3	7.2	B.U.
	Norm. 13 secs.										
3/23	15 secs. after 3 days of Vit. K.										
3/25						4.2/3.6	255/127	12	4	7.0	B.U.
4/1		5.1				4.2/2.8	223/125	12	0	6.8	
4/2	13 secs.										
4/8		5.1				5.2/2.9	261/139	12	3	8.0	
4/17						4.9/3.6	325/136	12	4	5.1	
7/13				26		4.0/2.9	173/119	15	0	10.4	
8/7	16 secs.					3.1/3.8	136/55	9	2	10.0	

B.S.P. Test 5 mgms. Kilo 70% Retention. Stool for blood Neg.
 Serology 3/18 3/25 3/18 Trace
 Mezzini 2 2 3/20 Trace
 Wass. 4 4 3/21 Trace
 VDRL Neg. Neg. 4/20 Neg.
 E.K.G. 3/18—Normal

Sputum—Specimens in March and July X3 Negative.
 Stools negative for ova and parasites X 4 Negative April.
 Heterophile Agglut. March 27—Negative.
 Febrile Agglut. Typhoid, Paratyphoid, Brucella, Weil Felix Neg. 4/17.
 Bile Culture 7/24 E. coli } Clear bile obtained
 Staph. albus }
 Throat Culture E. coli
 A. aerogenes
 Ascitic Fluid 7/20 Total Protein 5.2%.
 Chest X-Ray 3/19 Increase in transverse diameter of heart.
 4/7 Cardiac contour of hypertensive pattern.
 Lung fields show congestion.
 Gall Bladder 4/27 No dye in the biliary tract.
 4/17 Good concentration of the dye in the biliary tract and normal contraction.
 Delineation poor however.
 7/23 Gall bladder not visualized. Dye in intestinal tract.
 Esophagus 7/15 Negative.
 Stomach 4/27 Negative.

admission). Anorexia, edema to thighs, increasing abdominal distention, epigastric pain, occasional epistaxis were all prominent during the interim.

Physical Examination included a temp. of 103 R, slight icterus, a beefy red and smooth tongue, numerous new and old spider nevi, marked abdominal distention with ascites. Liver not felt because of distention. Pitting edema of

ankles. Definite hemorrhoids were seen.

Hospital Course: Continued fever, anorexia, ascites and peripheral edema. Minimal jaundice. Paracentesis on July 17 revealed 8 liters of amber-colored fluid.

After one month of observation, a surgical consultation was obtained and the patient was operated upon on August 13, 1953.

Pathological Findings

This patient's kidneys were small (100 and 120 gm. respectively) and histologically they showed the hyaline thickening of arterioles and small arteries and of glomerular basement membranes associated with *arteriolar nephrosclerosis*. These findings are fairly characteristic of essential hypertension, although they are severe enough to cause uremia in only about 10% of cases (1, page 333). However, the incidence is considerably higher if one includes only patients who die at the age of this patient (54 years) or younger (2).

The patient's heart was moderately hypertrophic. He had severe *acute fibrous pericarditis*, a common finding in cases of uremia; its pathogenesis is not known. There was slight *hyperplasia of*

the parathyroids, which was secondary to the renal insufficiency (3). There was also increased osteoclastic activity in the bone marrow. While this process was not sufficiently severe to justify the diagnosis of *osteitis fibrosa cystica*, it undoubtedly represented the early phase of that disease, which is a manifestation of increased parathyroid activity (4).

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Cases presented from the wards of the Fourth Medical Division, Bellevue Hospital, Dr. Charles Wilkinson, Dir.

Stenosing Tenosynovitis

As the name implies, stenosing tenosynovitis is a constriction of a tendon sheath which interferes with the gliding of the enclosed tendon. It is almost always seen in the hand, only rarely in the foot. Misdiagnosis when the patient is first seen is the rule rather than the exception. For this reason a presentation of the features of this not-uncommon condition is in order, to make the physician who first sees the patient "stenosing tenosynovitis-conscious."

DeQuervain in 1895 was the first to recognize the disease, involving the tendons over the radial styloid. Winterstein (1927), Finkelstein (1930), and Bunnell (1948) added cases to the literature, and Lapidus and Fenton (1952) and Lapidus (1953) have published excellent discussions of the subject.

Sites The three locations of this condition are (a) the sheaths enclosing the tendons of the abductor pollicis longus and extensor pollicis brevis (Figure 2), (b) the sheath of the flexor pollicis longus (Figure 3), and (c) the sheaths of the flexor sublimus and profundus tendons to each of the four lesser fingers (Figure 3).

Anatomy A tendon is a smooth, inelastic, non-contractile fibrous cord which transmits the power of a con-

tractile muscle, and produces motion of one bone against another at the joint between them. When a muscle contracts, the tendon is pulled in a straight line. To produce motion, it must cross at least one joint. To function properly, the tendon must be prevented from slipping over the bony prominence or from separating from the joint in flexion (like a "bowstring"). This is accomplished by an annular ligament or tendinous retinaculum acting as a pulley through which the tendon glides. Friction at the tendinous bend must also be minimized. This is accomplished in many cases by a lubricated sheath surrounding the tendon. These arrangements are found mainly at the ankles and wrists, and in the digits.

(a) At the wrist there are six compartments for tendon sheaths on the dorsal surface and three on the ventral surface, all under the circular annular ligament (Figures 2 and 3). Each pair of flexor tendons in the digits has a tendon sheath also (Figure 3). Only a few of the sheaths are ever involved in stenosing tenosynovitis, for reasons that will be apparent. (a) The tendon sheaths of the abductor pollicis longus and extensor pollicis brevis are together in one tight channel (Figure 2), formed by a bony groove over the radial styloid

Fig. 1. Lateral view of bones of wrist and hand.

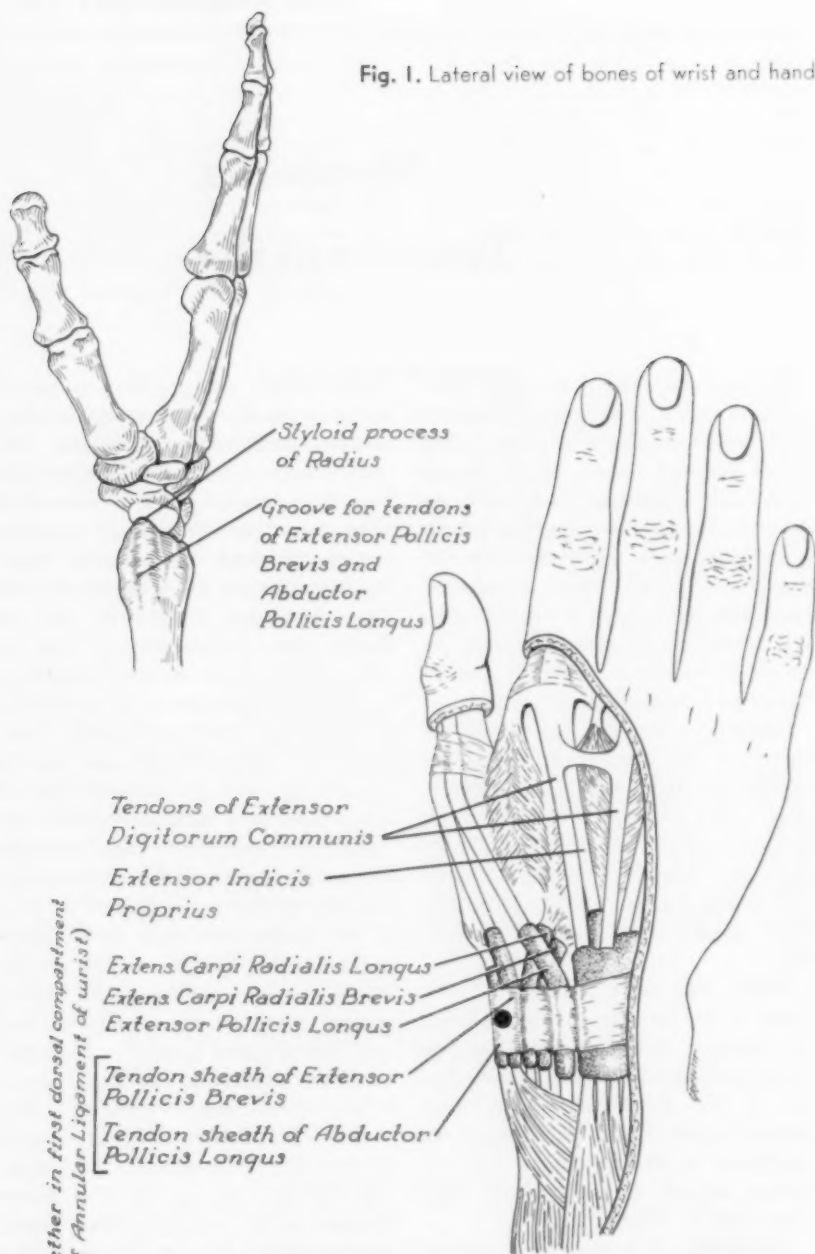


Fig. 2. Dorsal surface of the hand. Solid dot (•) indicates site of pain and tenderness in DeQuervain's disease.

(Figure 1) and the tough annular ligament. The tendons are markedly angulated when the hand is deviated ulnarward. The angulation is greater in the female than in the male, a likely reason for the greater prevalence of DeQuervain's Disease in women. In some cases, the abductor pollicis longus has been found to have from two to five tendons instead of one, thus reducing the space for gliding within the sheath.

(b) At the level of the first metacarpal neck the tendon of the flexor pollicis longus runs through a narrow channel, formed by a groove in the palmar surface of the first metacarpal and the transverse fibers of the strong ligamentum vaginale digiti. Two sesamoid bones are present in the capsule of the first metacarpal joint and further narrow the sheath at this point (Figure 3).

(c) Each pair of tendons of the flexor sublimis and profundus to each of the four lesser fingers enter a narrow osteofibrous tunnel at the region of the metacarpal neck, formed by a groove in the palmar surface of the metacarpal, and the ligamentum vaginale digiti (Figure 3).

Symptoms and Signs (a) Stenosing tenosynovitis of the abductor pollicis longus and extensor pollicis brevis (DeQuervain's Disease): The patient complains of pain over the radial aspect of the wrist and thumb, and radiating up the forearm. The pain is increased by motion, especially ulnar deviation of the hand. The grip may be weakened. On examination, there is a slight prominence over the radial styloid and tenderness at this point. Snapping and locking have never been observed in DeQuervain's Disease. The lesion is practically always unilateral.

(b) Stenosing tenosynovitis of the flexor pollicis longus: This is the only location where the disease is found in infants as well as in adults. In infants, the thumb is held flexed and cannot be fully hyperabducted passively. There is snapping and locking of the thumb, and on examination, tenderness and thickening are found in the mid-line on the palmar surface of the first metacarpal-phalangeal joint at the region of the two sesamoids. In adults the symptoms and signs are about the same, but in addition, the patient usually states that the symptoms are most marked after a night's rest, the tendon gradually limbering up during the day.

(c) Stenosing tenosynovitis of the finger flexors: (Trigger-Finger): The patient complains of pain and snapping over a metacarpal-phalangeal joint. There is tenderness localized in the mid-line on the palmar surface of the MP joint of the involved finger, and a firm swelling may be found in this area.

Differential Diagnosis The differential diagnosis is simple if the disease is kept in mind. Acute tenosynovitis, tuberculous tenosynovitis, chronic non-specific tenosynovitis, osteal and periosteal inflammation, tumors, and localized lesions of peripheral nerves can theoretically be confused with stenosing tenosynovitis, but in practice present no real problem. Infectious and osteoarthritis should be considered, but can be distinguished by the fact that they often involve multiple joints, and are manifested by pain with both flexion and extension; generalized joint tenderness instead of localized tenderness; and absence of snapping and locking. Of course, arthritis can coexist with stenosing tenosynovitis. A careful history and physical examination, neurological

examination, and x-rays are always advisable.

Etiology Seventy-five percent of the cases of this disease occur in females, and the right hand is involved twice as frequently as the left. Most patients are middle-aged; only the flexor pollicis longus is involved in infants. In most cases there is no definite history of acute trauma. However, chronic trauma, that is, oft-repeated irritation of the tendon sheath by rubbing it back and forth over the bone, is undoubtedly the

major etiological factor. Typing, sewing, knitting, washing and wringing clothes, playing the piano, etc., are activities that may produce this chronic irritation.

Pathology There is marked thickening of the tendon sheath, often forming an hour-glass constriction at the point of "squeeze." There may be a bulbous enlargement of the tendon on either side of the constriction. An excessive amount of synovial fluid is often found within the sheath. Spiderweb ad-

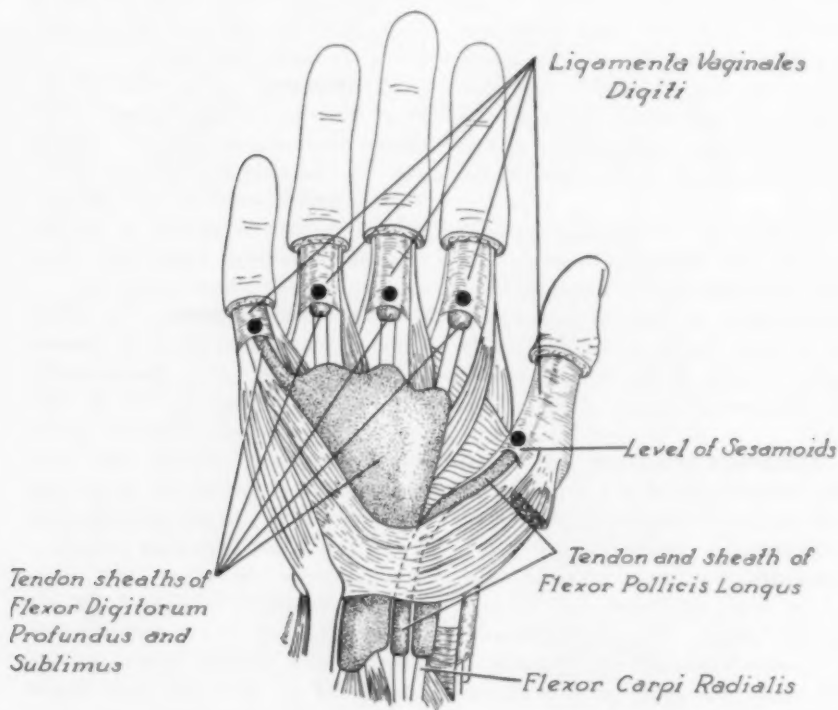
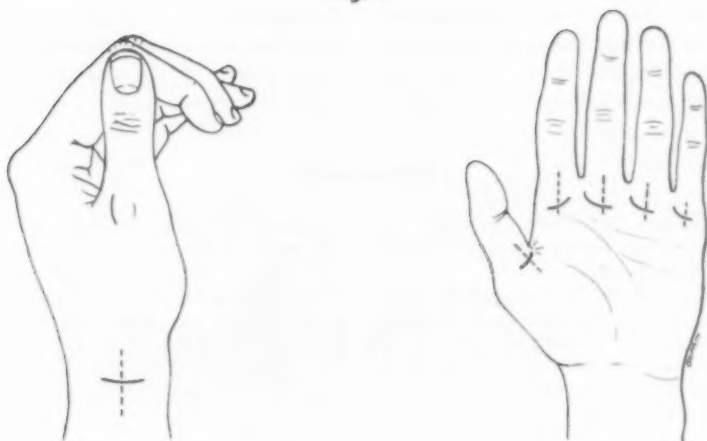


Fig. 3.

Palmar surface of the hand. Solid dots (•) indicate sites of pain and tenderness in stenosing tenosynovitis of flexor pollicis longus and of flexors of the four lesser fingers.

Fig. 4



Skin incisions (solid lines)
Incisions in tendon sheaths (broken lines)

Locations of incisions in the palm and at the wrist.

hesions are commonly seen between the tendon and the sheath, but no fibrous adhesions have been observed.

Treatment Spontaneous recovery has occurred in some patients, but in most cases the symptoms persist for years without treatment. For patients who have had symptoms less than six weeks, conservative therapy may be tried first.

This consists of immobilization of the hand and involved finger in an unpadded plaster cast for four to five weeks. The cast should extend from just below the elbow to the distal palmar crease and include the involved thumb or finger, maintaining the wrist in dorsiflexion and the involved digit in the position of function.

If the symptoms are not gone after (Vol. 84, No. 3) MARCH 1956

the cast is removed, or if the symptoms have been present for more than six weeks when the patient is first seen, operation is indicated. This may be done in ambulatory patients, but must be carried out under the strictest aseptic conditions, preferably in the hospital operating room. Local procaine block anesthesia is sufficient in adults; general anesthesia is necessary in infants. Incision is made over the area of tenderness, in line with the skin creases, and shown in Figure 4. The tendon sheath is then exposed and is divided longitudinally, care being taken not to injure the enclosed tendon. (Figure 4). Only the skin is sutured, and a small dry dressing is applied to allow for immediate mobilization of the finger and wrist, which prevents reformation of the

constriction. Sutures are removed in a week. Under no circumstances should a longitudinal skin incision be used over the radial styloid, for this results in a scar adherent to the tendon,

and markedly limits motion. Recurrence of symptoms is not to be expected if the sheath has been adequately opened. Excision of part of the tendon sheath is usually not necessary.

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WANT A CHUCKLE?

SEE

“OFF THE RECORD . . .”

SHARE a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. Pages 15a and 21a.

EDITORIALS

Therapy of the Common Cold

New York Medicine recently published a panel discussion of the common cold which took place at the New York Academy of Medicine. The discussion was both baffling and helpful. One of the discussants, however, relieved the gloom by telling the story about Osler's reply when asked how he treated the common cold. He said the patient should place a hat at the foot of the bed, go to bed, and then drink hot toddies until he could see two hats.

This treatment, so far as we know, has not been entirely superseded.

Well, we have succeeded in conquering lobar pneumonia therapeutically; perhaps the common cold will not forever stultify us in our management of it.

Calomel — Almost Forgotten

Some of the so-called psychosomatic and even psychotic symptomatology of patients are toxic phenomena calling

for old-fashioned eliminative management rather than fancy psychiatry and psychoanalysis. The old-time doctor's calomel should not be wholly forgotten by *too* up-to-date practitioners.

We are informed that our State Hospital men understand this angle of practice very well and are often able to detoxify new patients by simple methods with consequent clarification of mental ailments.

We believe that Doctor Walter Alvarez would agree with this point of view. It's in the common-sense tradition, we hope.

A Unique Drug

Aspirin almost falls into the panacea category, so varied is its alleged therapeutic range. Thus its latest use is to reduce retention of carbon dioxide and so to be "a useful adjunct in the treatment of patients with pulmonary emphysema" (*American Journal of Medicine*, 19:509, 1955).

We would not be a bit surprised to hear aspirin cited any day as a sovereign remedy for impaired libido or osteoporosis. No other drug seems to approach its fantastic spectrum; it even allegedly serves some of the therapeutic purposes of cortisone.

It seems to be necessary to have some drug upon which a kind of unique metaphysical reliance can be placed in all circumstances. Aspirin fulfills that purpose admirably. No sacred icon commands greater deference.

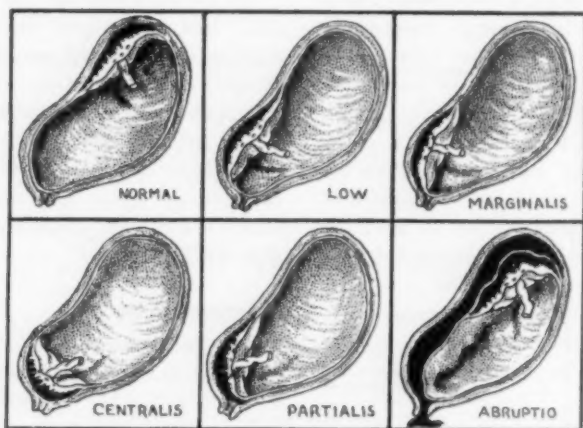
The Drunkard's Elysium

A new steroid compound is reported to have put patients hospitalized for advanced alcoholism back on the road to full recovery "in an amazingly short

period of time." The psychiatrists conducting this study state that "successful withdrawal from extreme alcoholism has been striking, and several cases of advanced delirium tremens were free of delirium symptoms after only four hours. Most patients were usually free of symptoms within an average of two to six hours." Impending and overt delirium has responded promptly to treatment and tremor, anxiety and agitation have been similarly reduced.

It would seem that at last the joys of alcoholism can be embraced and experienced without penalty, with prompt repetition of a debauch entirely feasible. Herein is attained a realization of the drunkard's idea of Elysium—blissful abode of the blessed.

Clini-Clipping



Positions occupied by the normal placenta, varieties of placenta previa and placenta abruptio.

GYNECOLOGY

HARVEY B. MATTHEWS, M.D., F.A.C.S.*

Vaginal Hysterectomy for Uterine Prolapse

W. H. Mast (*Surgery, Gynecology and Obstetrics*, 100:315, March 1955) reports 52 cases of uterine prolapse treated by vaginal hysterectomy, using a modification of the Spaulding-Richardson technique, in which the corpus is amputated before the cervix. Careful preoperative study was made in each case especially to rule out the presence of adenocarcinoma of the body of the uterus or carcinoma of the cervix, both of which are definite contraindications to the operation described for uterine prolapse. In the 52 patients operated on, there was no case of procidentia, the uterine prolapse was incomplete in 37 cases and complete in 15 cases. Preoperative examination showed rectocele in all cases, chronic cervicitis in 48 cases, leiomyoma of the uterus in 24 cases, (these tumors are not considered to be a contraindication to the operation employed). The chief symptoms noted by the patients were vaginal discharge in 45 cases, pelvic pressure, backache or abdominal discomfort in 49 cases, urinary symptoms in 48 cases, dyspareunia in 20 cases and menorrhagia in 28 cases. Spinal anesthesia, with intravenous thiopental drip, was employed in 32 cases with good results. General anesthesia with cyclopropane or nitrous oxide was used in the remaining cases.

There were no postoperative deaths in this series of cases. There were 4 cases of postoperative shock, 2 in the earlier part of the series, before the importance

of control of bleeding from the small vaginal arteries was recognized, and 2 from hypercapnia due to cyclopropane anesthesia, which has since been prevented by adequate aeration of the lungs when the operation is completed.



Matthews

Some urinary complications requiring catheterization occurred in all patients. Vaginal bleeding of moderate degree occurred in 22 patients, and was more severe in one patient. There was no recurrence of cystocele, urethrocele or vault prolapse in any case. Careful postoperative study showed that in no case was there adenocarcinoma of the uterus or cervical cancer, showing the value of the careful preoperative study of these patients. Since this report was

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compiled, 10 other patients with vaginal prolapse have been operated on by the same technique; there were no post-operative complications except "transient" urinary retention in 4 cases.

COMMENT

There was a time in the past when the gynecologic surgeon would not have chosen vaginal hysterectomy for the relief of uterine prolapse. However with the passing of time and better understanding of the anatomy and physiology involved, coupled with vastly improved operative technic and asepsis, vaginal hysterectomy has been more widely employed in recent years.

There are several basic types of operation recommended for vaginal hysterectomy but each surgeon usually modifies his favorite procedure to suit his ideas of proper repair. Dr. Mast has carried out this idea very successfully in the report of 52 cases herewith reported. "Practice makes perfect" and therefore any technical procedure to be successful must be employed routinely by the same surgeon many many times. Plastic surgery is a difficult taskmaster, requiring patience, precision and judgment. Modern preoperative preparation and asepsis are most important allies in plastic surgery.

Of course the positive elimination of cancer of the cervix or uterus is obligatory.

The successful repair of uterine prolapse constitutes good plastic surgery and we know of no other gynecological procedure that results in as much sincere appreciation on the part of the patient.

H.B.M.

Benign Lesions of the Cervix: Evaluation and Selection of Methods of Treatment

F. J. Hofmeister and R. L. Gortney (*Obstetrics and Gynecology*, 5:504, April 1955) report on the replies received from 438 members of the Central Association of Obstetricians and Gynecologists in response to a questionnaire on benign lesions of the cervix. From an analysis of these replies, the authors' own experience at Milwaukee Hospital, and a review of recent literature, it is evident that the lesion of the cervix to be treated must first be diagnosed; the

diagnostic procedures include a routine vaginal smear, a screening Papanicolaou smear and biopsy when indicated. If the vaginal smears show trichomonal or monilial infection, this infection must be eradicated before any cervical lesion can be effectively treated. Tuberculous cervicitis is rare, and is best diagnosed by biopsy; it has been treated surgically, by radiation, and more recently by antibiotics—streptomycin, isoniazid, or a combination of the two. If endomettiosis of the cervix is diagnosed and is found to be primary and confined to the cervix, it can usually be treated by cautery, but extensive lesions require surgical removal. The treatment of choice for erosion of the cervix is electrocautery, as clearly shown in the replies to the questionnaire; conization is used when the lesion is more extensive; either of these measures must be followed by examination and "office dilatation" of the cervix when indicated, to prevent strictures. Nabothian cysts are also best treated by cautery in the opinion of over 75 per cent of gynecologists answering the questionnaire. Prevention of cervical lacerations resulting from childbirth should be emphasized as more important than treatment. If lacerations are present that do not cause symptoms, no treatment is necessary; when treatment is indicated, the use of the cautery is the method of choice; repair of cervical lacerations was advocated by less than 25 per cent of the gynecologists answering the questionnaire. Cervical polyps should be removed and examined histologically, although the incidence of malignancy in cervical polyps is "very low." Leukoplakia of the cervix is of rare occurrence, but all lesions of this type should be biopsied as at least 50 per cent of

gynecologists consider them to be precancerous. The authors favor "cold knife conization" for biopsy, followed by electroconization if indicated to control bleeding.

COMMENT

Reading this article is comparable to taking a postgraduate course on benign lesions of the cervix. Intensive study will give the physician explicit instructions on methods of diagnosis, evaluation and selection of methods of active treatment. Since the opinions and methods of treatment were gleaned from the author's experience and a review of the literature, coupled with data compiled from answers to a questionnaire sent to 438 expert gynecologists, they can be said to furnish a cross section of the best in current management of benign lesions of the cervix.

Be sure the lesion is benign before any form of treatment is instituted. Too many early malignant lesions of the cervix are treated as benign until successful treatment for malignancy is impossible. Modern diagnostic methods will eliminate such error if carried out on every case prior to the beginning of treatment. Keep this article handy for reference.

H.B.M.

Rotating Endometrial Brush: New Technic for the Diagnosis of Fundal Carcinoma

J. E. Ayre (*Obstetrics and Gynecology*, 5:137, Feb. 1955) describes an instrument for collecting cells from the endometrium to facilitate diagnosis of carcinoma of the body of the uterus by the smear technique. It has been recognized by those who have used the cervical smear for diagnosis of cancer of the cervix, that this method gives more accurate result for cervical cancer than for endometrial cancer. The brush is enclosed in a flexible polyethylene tube, which is inserted beyond the external os; then the brush is extended from the tube and rotated by means of a controlled plunger; the brush is rotated so as to "traverse the uterine wall thoroughly." The brush is then drawn back into the tube before the instrument is withdrawn; and the cells from the brush

are immediately placed on a glass slide, for staining. The use of this endometrial brush is not recommended as a procedure for routine examination of all women. It is of special value in women after the menopause, and in younger women, when the cervical smear shows abnormal endometrial cells. The brush is used as an office procedure and the excellent concentration of endometrial cells which is procured by the endometrial brush has been found of definite value in the diagnosis of benign and malignant tumors of the body of the uterus.

Cytodiagnosis of Endometrium: New, Simple Office Procedure

M. L. Winer and associates (*Obstetrics and Gynecology*, 5:279, March 1955) describe a method for collecting cells from the endometrium, with a small #8F polyethylene plastic tube, which is soft and pliable, and easily introduced into the uterus without dilatation of the internal os—a type of catheter. The tube is cut one inch from its distal end; this provides a central opening and eliminates side openings. Since this tube is flexible, its introduction through the internal os is made easier if a uterine forceps is used to hold the tubing as it projects from the external os; this not only prevents kinking of the tube if there is some slight obstruction to its passage, but also prevents it from being expelled by uterine contractions. The tube is introduced two or three inches into the uterus before suction is applied by means of a 10 cc. syringe, applying constant negative pressure, as the tube is withdrawn. When the aspirate is seen in the tube, suction is stopped. The aspirate in the tube is expressed on slides for staining

immediately. As the tubing is very inexpensive, it can be discarded instead of cleaned and sterilized for future use. This method gives a good supply of endometrial cells; it can be done rapidly and with little, if any, discomfort to the patient. It can, therefore, be used not only as a screening test for the early diagnosis of carcinoma of the endometrium, but can also be used to make serial cytological studies of the endometrium in endocrine disorders.

COMMENT

To obtain endometrial cells from the cavity of the uterus in a well preserved concentrated state suitable for cytological (smear) study presents certain technical difficulties. New instruments and techniques are constantly being proposed in order to find a more accurate method for the proper collection of endometrial cells. Herewith are presented two such methods—the Rotating Endometrial Brush by J. E. Ayre and a small soft #8 F polyethylene catheter type tube (of certain dimensions) with suction syringe attached offered by M. L. Winer and Associates. These are recommended as office procedures; however, for those not accustomed to instrumentation of the uterine cavity for this purpose it would seem wise to get “instructed” before attempting to use these or similar instruments. It's fairly easy if you know how. Remember! the object of this procedure is to obtain, without undue trauma, well preserved endometrial cells in concentrated form which will yield good smears, thereby facilitating the more accurate diagnosis of cancer of the uterus.

H.B.M.

Vitamin E in the Treatment of Primary Dysmenorrhea

E. B. Butler and E. McKnight (*Lancet* 268:844, April 23, 1955) report the treatment of primary “spasmodic” dys-

menorrhea in 50 young women with vitamin E. The women treated were eighteen to twenty-one years of age, students at the University of Wales, in good general health, and with regular menstrual periods. The dysmenorrhea in these cases occurred just before and at the onset of the menstrual period. Vitamin E was given in a dosage of 50 mg. t.i.d.s. for ten days before the menstrual period and for the next four days; this fourteen-day course of treatment was repeated for at least two menstrual cycles, and for three menstrual cycles in some cases. Twenty of the young women became entirely free from pain in both the premenstrual and the menstrual phases; in 8 cases relief was obtained in the first month of treatment with vitamin E and in the other 12 more gradually.

In 17 other cases the severity of the pain was diminished so that the women complained “only of discomfort” in the premenstrual and/or in the menstrual phase; improvement was noted in the first months in only 4 of these patients. A year later the young women who had received vitamin E were re-examined; some of them stated that the pain had recurred but was less severe two to six months after treatment; they asked for a further supply of the vitamin E tablets, “because they had been impressed by the relief given them.” The authors consider that these results “are sufficiently encouraging to warrant extended clinical trials.”

OBSTETRICS

HARVEY B. MATTHEWS, M.D., F.A.C.S.*

Naucaïne Therapy in Nausea and Vomiting of Pregnancy

D. D. Curtis (*Obstetrics and Gynecology* 5:209, Feb. 1955) reports the treatment of 100 patients with nausea and vomiting of sufficient severity to require medication with Naucaïne. Of these 100 patients, 52 were attending a prenatal clinic and 48 were private patients. Severe nausea was associated with vomiting in most cases; most of these patients failed to gain weight and 30 per cent showed a loss of weight; in 2 cases a diagnosis of hyperemesis gravidarum was made. The drug employed in treatment—Naucaïne—is “a specialty treated form of procaine hydrochloride.” In the clinic patients, Naucaïne was usually given in the form of tablets, but a liquid oral preparation was used in 4 cases. Dosage was varied according to the patient's response to treatment, but as a rule 1 tablet (or 4 cc. of the liquid) was given every hour for eight hours; if no relief was obtained after the eighth dose, the treatment was considered a failure as a rule, although two of these patients were given twelve doses. For the private patients, an initial dose of 3 Naucaïne tablets was given followed by one tablet every thirty minutes for four hours, then by one tablet hourly until relief of nausea was obtained. Each patient was given 20 tablets, and it was not usually necessary to refill this prescription. Only one of the clinic patients showed any side effects which were found to be

due to procaine sensitivity; and none of the private patients showed any side effects. Results were classed as good—complete relief of nausea and vomiting and promotion of normal weight gain—45 of the clinic patients and 42 of the private patients; as fair—persistence of mild nausea but no vomiting and weight stabilization—in 4 of the clinic and 3 of the private patients; as poor—persistence of symptoms in 3 clinic and 2 private patients.

Bonadoxin®; A New Effective Oral Therapy for Hyperemesis Gravidarum

Arthur Weinberg and W. E. F. Werner (*American Practitioner and Digest of Treatment*, 6:580, April 1955) report the use of Bonadoxin® in the treatment of hyperemesis gravidarum. Bonadoxin® is a new antihistamine preparation, containing 25 mg. of meclizine hydrochloride and 50 mg. of pyridoxine hydrochloride in each tablet. One hundred private patients who complained of “an annoying degree” of nausea and vomiting in the early months of pregnancy were treated. One tablet twice a day, taken at twelve hour intervals, was prescribed; after two weeks' treatment,

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patients were instructed to attempt to decrease the dose to one tablet daily, and then to omit the drug for a day; and to discontinue treatment entirely when they were "comfortable" without medication. One patient complained of dizziness after each dose, and discontinued the drug. Otherwise the patients tolerated the drug well, and showed no signs of drug sensitivity and no toxic reactions. In 30 cases, the results of treatment were considered "excellent," with complete relief of symptoms; in 58 cases, a "good" result was obtained with control of the vomiting but some nausea persisting; in 12 cases the treatment was without effect. The authors are of the opinion that this new antihistamine preparation "deserves further clinical trial and study," in the treatment of hyperemesis gravidarum.

COMMENT

As is well known, nausea and/or vomiting of some degree occurs in a large percentage of all pregnant women and when persistent and severe may become a serious problem. Early treatment therefore is very desirable. Etiology is little understood hence no specific therapy is available. Many agents, some old, some new, have been tried but with varying success or total failure. Choosing therapy in each individual case is difficult and requires a great deal of study and personal attention. Capturing the patient's confidence is extremely helpful, particularly in the "nervous type" of individual. Under these circumstances, empiric therapy is obligatory. "If at first you don't succeed try try again" is applicable. The two new drugs Naucaïne and Bonadonin employed in the foregoing reports each gave good results and are worthy of further trial. Read them for details.

H.B.M.

The Large Fetus: A Study of 547 Cases

A. C. Posner and associates (*Obstetrics and Gynecology* 5:268, March 1955) report that in 16,209 full-term deliveries at the Harlem Hospital from September 1, 1949 to March 1, 1954, there were 547 infants that weighed

9 pounds or over, an incidence of 3.4 per cent. Of these 547 large infants, 500 were Negroes and 47 were white; but as a large percentage of the women delivered at Harlem Hospital were Negroes, the percentage of large infants was smaller among the Negroes than among the whites. Eighty-seven per cent of the mothers delivering large infants were multiparas, and 20 per cent were grand multiparas (those who previously had delivered five or more viable infants); while in the total number of deliveries, only 7 per cent were grand multiparas. The incidence of diabetes mellitus in the mothers delivered of large infants was 2.2 per cent; but only 0.2 per cent in the entire series of obstetric patients. Only 3.7 per cent of these large infants were delivered by cesarean section, as compared with 2.8 per cent of all infants. The authors are of the opinion that more frequent use of cesarean section might have reduced fetal mortality as well as the incidence of Erb's paralysis. The fetal mortality for the large infants weighing more than 9 pounds, was double that for all full-term infants, increasing as the birth weight increased. Serious birth injuries occurred more frequently in infants weighing over 10 pounds (5.5 per cent) than in those weighing 9 to 10 pounds (0.2 per cent). The chief maternal complication in this series was the 9.1 per cent incidence of postpartum hemorrhage in mothers who delivered infants weighing over 10 pounds.

COMMENT

The problem of the delivery of the large baby (9-10 lbs. and over) is always with us. The incidence varies in different communities but the physician doing obstetrics will encounter the problem sooner or later and he should be prepared to handle it.

The method of delivery in each case must

be evaluated separately. Estimating the size of the baby is always inaccurate and guesses at weight are futile. However, the physician should train himself to recognize a large over-size baby. Fortunately most over-size babies occur in multiparous women, which favors vaginal delivery, provided other conditions are favorable. Remember! that in vaginal delivery of the large baby the incidence of fetal mortality and morbidity is always high, increasing with the increase in weight of the baby. The larger the baby the more traumatic the vaginal delivery. Likewise the risk to the mother is increased as a result of increased trauma, bleeding and shock. We agree with the authors that fetal mortality and morbidity in their cases would have been lower had cesarean section been employed more frequently. The possibility of section should be kept in mind in all these cases and if and when indicated should be performed before mother and baby become so exhausted as to become poor operative risks. Elective section may be justified in the presence of the very large over-size baby, particularly in the presence of fetal or maternal complications. Consultation with an experienced colleague always helps to share the burden of responsibility. Postpartum hemorrhage is always a possibility in the overdistended uterus and previous provision for its proper treatment is demanded.

Diabetes and toxemia of pregnancy are not infrequently encountered. Naturally these cases require hospitalization and in addition the physician must surround himself with the facilities and personnel for the adequate management of all possible complications in mother or baby. This is definitely not "a one man job".

H.B.M.

The Role of Vasodepressor Drugs in the Treatment of Toxemia of Pregnancy

S. T. Garber (*Western Journal of Surgery, Obstetrics and Gynecology*, 63:201, April 1955) reports that at the Cincinnati General Hospital eclampsia has been controlled without the use of sedatives and with magnesium sulfate and the vasodepressor drugs (veratrum and/or Apresoline) since the beginning of 1930 for nearly twenty-four years (when this report was presented in 1954). In this time the maternal mortality has been 1.3 per cent, and since 1944, no patient with eclampsia has died. Veratrum was first used, and

more recently Apresoline has been used in most cases, although some patients did not respond so well to this drug as to veratrum. A combination of veratrum and Apresoline "seems most logical" in the author's opinion. The vaso-depressor drugs used are of value in the treatment of pre-eclampsia and eclampsia because they improve the impaired circulation of certain vital organs, "specifically" the circulation of the brain, kidney and uterus; these drugs do not cure eclampsia but they are definitely useful in alleviating the condition.

The Use of the Magnesium Ion in the Management of Eclamptogenic Toxemia

J. A. Pritchard (*Surgery, Gynecology and Obstetrics*, 100:131, Feb. 1955) reports 211 patients with eclampsia or pre-eclampsia treated with magnesium sulfate. If the patient had eclamptic convulsions, 4 Gm. of magnesium sulfate in a 20 per cent solution were given in four to five minutes. Then 10 Gm. of magnesium sulfate in a 50 per cent solution were given by intramuscular injection into the buttocks. Following this, intramuscular injections of 5 Gm. magnesium sulfate in a 50 per cent solution were given every four hours as long as the patellar reflex was present and urine output was 100 ml. or more every four hours. This treatment was continued until the patient was delivered, and usually for twenty-four hours after delivery. In cases of pre-eclampsia in which eclamptic convulsions had not occurred, the intravenous injection was not given, but the intramuscular injections were given with the same dosage. There was only one maternal death in this group of patients; this patient was transferred from another hospital with

eclampsia; the convulsions were controlled, but she died on the fourth day postpartum, with marked hypertension, probably from cerebral hemorrhage. There were 221 infants delivered, 21 of whom died (an "uncorrected mortality" of 10 per cent). The author states that "the mechanism by which magnesium prevents eclamptic convulsions remains unknown." It has no hypotensive action and in cases of pre-eclampsia or eclampsia associated with marked hypertension, a hypotensive drug is indicated; at the University Hospitals of Cleveland hydralazine is given intravenously with magnesium sulfate intramuscularly in cases of this type.

COMMENT

"An ounce of prevention is worth a pound of cure" certainly applies to the severe toxemias of pregnancy. Adequate prenatal care can all but eliminate pre-eclampsia and eclampsia, particularly the latter. In such clinics and in private practice it is rare indeed to see a case of eclampsia. Teachers are "hard put" to find sufficient material for demonstration. In many teaching clinics eclamptic convulsions are shown by film. Students are particularly impressed by what can be accomplished by adequate preventive measures. Active treatment of the severe toxemias of pregnancy—pre-eclampsia and eclampsia—consists of immediate hospitalization, the administration of sedatives and magnesium sulfate. Some give a vasodepressor drug (e.g. veratrum, apresoline or hydralazine) routinely; others give it only in the presence of very high blood pressure and others do not use these drugs.

We do not employ them routinely but may give veratrum in a case with very high blood pressure. The magnesium sulfate is given intravenously in the fulminating case and intramuscularly if no convulsions have taken place or following the intravenous administration when very acute symptoms have subsided.

Treatment should be continued for at least 24 hours postpartum or longer if conditions warrant; the prognosis, in many cases, is vastly improved by this procedure. Every physician doing obstetrics should "know" one acceptable method of treating the severe toxemias of pregnancy since early active treatment gives far better results than procrastination with desultory activity.

H.B.M.

Anticoagulants in Obstetrics

J. E. Faber and W. F. Kvale (*Obstetrics and Gynecology*, 5:494, April 1955) report that they first used an anticoagulant (heparin) in postpartum patients in 1940, when 2 women who had been delivered elsewhere, were admitted to the Mayo Clinic because of iliofemoral thrombophlebitis; both showed evidence of non-fatal pulmonary embolus; heparinization, according to the method used in surgical patients, was employed; both patients recovered promptly. In 1949, the authors reported the use of anticoagulants in 36 postpartum patients, 9 of whom had had a pulmonary embolus; all recovered and their hospital stay was definitely shortened as compared with postpartum patients with thromboembolic disease not given anticoagulants. By 1953, anticoagulant drugs had been given to 162 obstetric patients; this group included 59 patients who had been given anticoagulants "on a prophylactic basis," because of a history of thromboembolic disease; 6 of these had previously had a non-fatal pulmonary embolus; and 12 had a history of previous iliofemoral thrombophlebitis. With this type of management from 1943 through 1953, a period during which 7860 patients were delivered (including 236 cesarean sections), there was no case of pulmonary embolus on the obstetric service. In the obstetric patients with thrombotic complications treated with anticoagulants, the hospital stay was definitely shortened as compared to the previous experience with such complicated cases before the use of anticoagulants. Without anticoagulants, the average hospital stay of patients with thrombophlebitis was three weeks. In the series of 162 patients treated with anti-

coagulants, "approximately" two-thirds were discharged on or before the tenth day post-partum, and 91 per cent by the fourteenth day. On a check-up six weeks after delivery, only 14.1 per cent required any form of support for the affected limbs; if the patients who showed signs of venous incompetency resulting from thrombophlebitis in a former pregnancy are eliminated, this percentage is reduced to 6.7 per cent.

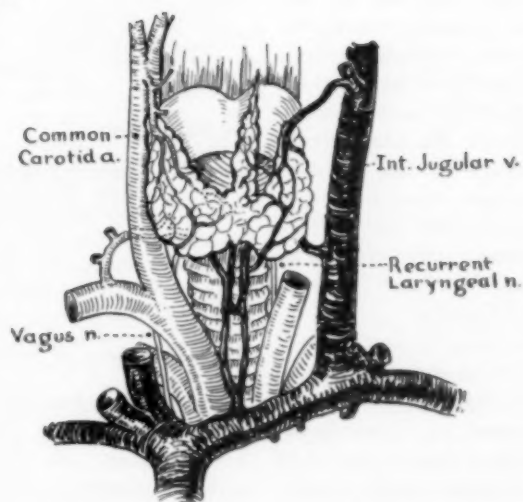
COMMENT

The use of anticoagulants in obstetrics has not kept pace with their use in surgery and

medicine. Fear of hemorrhage in the obstetric cases evidently has been the chief deterrent. Furthermore the standardization of available anticoagulant drugs has been slow in developing. Today, however, there have been enough data published to justify the more extended use of anticoagulant drugs in obstetrics provided the patient is confined in a hospital with a competent laboratory for checking prothrombin levels; obviously, until more is generally known of the action of these drugs and a more practical way of determining indications and a simpler routine for their administration are worked out, the general practitioner cannot make use of this therapy. On the other hand, he can accomplish much for his patient by "being up to date" on the anticoagulants in obstetrics. This is an excellent article and has a good bibliography. Study it.

H.B.M.

Clini-Clipping



Blood and nerve supply of the thyroid gland.



Medical Book News

Edited by Robert W. Hillman, M.D.

Pediatrics

The Diagnosis and Treatment of Convulsive Disorders in Children. By Samuel Livingston, M.D. Springfield, Charles C. Thomas, [c. 1954]. 4to. 314 pages, illustrated. Cloth, \$9.50.

Dr. Samuel Livingston, Asst. Professor of Pediatrics at Johns Hopkins School of Medicine, and for the past seventeen years Physician in Charge of the attached Epilepsy Clinic, has collected the statistical data and his considerable clinical experience from four thousand and more epileptic patients and put them into book form for the benefit of general practitioners, pediatric and otherwise. He has had Dr. Francis F. Schwentker add a short chapter covering the "Social Management" of Epilepsy and Dr. Earl G. Walker a long, interesting and well illustrated chapter on the "Surgical Management" of Epilepsy.

Dr. Livingston is to be congratulated for the clarity of his exposition of the subject. When one finishes, for example, the chapter on "Encephalography" he will find that he has easily absorbed the rudiments of this subject.

All the important drugs used to suppress the various clinical manifestations of the convulsive diathesis are concisely but thoroughly discussed according to

their advantages and disadvantages.

Dr. Earl Walker's chapter adds just enough knowledge of the surgical aspect of focal epilepsy to round out a full practical knowledge of epilepsy for a practitioner, and the whole book puts into his hands the understanding which will aid him in helping this rather large group of sufferers. For there is no one who can better handle the convulsive group problem than the interested, alert general practitioner.

It is a pleasure to whole-heartedly recommend this book.

KENNETH G. JENNINGS

Reproduction

The Ciba Collection of Medical Illustrations, Volume 2. A Compilation of Paintings on the Normal and Pathologic Anatomy of the Reproductive System. Prepared by Frank H. Netter, M.D. Edited by Ernst Oppenheimer, M.D. Summit, N. J., Ciba Pharmaceutical Products, [c. 1954]. fº. 286 pages, illustrated. Cloth, \$13.00.

The medical drawings of Dr. Netter are known to every physician in the United States. In this volume are gathered together many old and some new drawings, all of which concern the reproductive system. They, along with the text, provide an excellent postgraduate course in the anatomy and func-

tion of the reproductive systems of both male and female. Many pathologic conditions are also illustrated.

This volume is also invaluable as an aid in explaining pathologic conditions to patients in this age of a scientifically enlightened public. This folio of 233 beautifully reproduced plates should be in the possession of every physician whose problems are concerned with the Reproductive System.

WINFIELD E. STUMPF

Malariology

Biology of Anopheles Gambiae. Research in French West Africa. By M. H. Holstein, Dr. ès Sc. Geneva, World Health Organization, (New York, Columbia University Pr., International Documents Service), [1954]. 8vo. 172 pages, illustrated. Paper, \$2.00. [World Health Organization Monograph Series #9]

This monograph was originally published by the World Health Organization in French. The English edition includes some additions and amendments by the author. Any person interested in the problems of malaria will find the very detailed and accurate data on the principal vector of the disease in tropical Africa fully delineated in this monograph. The monograph is based on vast and comprehensive research in French West Africa. Stress is laid on the biology of *Anopheles Gambiae*. The aim of the monograph has been effectively reached as the aspects that deal with the control of *A. Gambiae* and malaria by insecticides as well as the discovery and establishment of the existence of varieties of this mosquito are fully covered. The author puts forward his theories of the existence of two forms of *A. Gambiae*. He differentiates these two by their maxillary in-

dex, trophic preferences, choice of breeding places, and their habits, and states that they comprise a zoophilic and an anthropophilic form. The bibliography is extensive with over 400 references.

Physicians and those with health work will find this a good reference monograph.

EARL W. DOUGLAS

Medical Care

The City of Hope. By Samuel H. Golter. New York, G. P. Putnam's Sons, [c. 1954, The Author]. 8vo. 177 pages, illustrated. Cloth, \$3.50.

In this fascinating little book the author has presented a most interesting account of a victory of modern medical progress. In cleverly worded phrases are found reasons for many of our present medico-sociological problems. Tracing the development of an eleemosynary institution of healing from its earliest conception through to complete fruition is truly an inspiring story.

We may indeed feel grateful to the author for his efforts toward renewal of hope in the ailing and the excellent manner in which he tells us the story of it.

JEROME WEISS

Medical Progress

1955 Medical Progress. A Review of Medical Advances During 1954. Morris Fishbein, M.D., Editor. New York, The Blakiston Division, McGraw-Hill Book Company, [c. 1955]. 8vo. 346 pages. Cloth, \$5.00.

This 1955 *Medical Progress* is the third of the series which began in 1953. It should serve as a handy reference for practitioners of medicine. By now many physicians should welcome it as an aid in their practice.

BERNARD SELIGMAN

Autopsy Consent

Most physicians today are agreed that failure to get postmortems is an important obstacle to the advancement of pathology—and thus to medicine and surgery.

This is not a new fact. The contribution of the autopsy to medical education has been recognized down through the centuries. But today, many who have made a closer evaluation now consider the autopsy the most essential element of medical progress.

The American Medical Association requires that any hospital approved for internship or residency training must maintain a specified minimum autopsy percentage.

Yet, in spite of this widespread acceptance of their value, the percentage of autopsies to hospital deaths varies considerably from one hospital to another. Some centers regularly report averages of from 75% to 90%. Others rarely exceed 15%. Why this difference?

Do such things as geographic distribution and local religious and racial customs account for the spread? Even a brief comparison of the statistics reveals that this is not the case.

Two hospitals in the same city and having the same religious and racial

division of patients often present wide differences in their autopsy percentages.

Physician's Attitude Experience has caused many hospital administrators to point to the physician's attitude as an important factor. They say the desire or lack of desire in personally securing autopsy permission from surviving relatives plays a significant part in the percentage of autopsies reported by the hospital.

One administrator puts it this way: "If the physician makes a real attempt to get autopsy consent and is prepared to answer the questions of surviving relatives concerning autopsy, he can maintain a high batting average. The disinterested physician asks permission as a routine formality, takes the first refusal as the final answer."

A good part of the enthusiasm of the physician depends, of course, upon the enthusiasm of hospital authorities and others on the hospital staff.

Autopsy Plan Many institutions have developed a definite program for securing autopsy consent. A typical plan would work like this:

1. The first physician to meet with the relatives asks for autopsy permission. The physician can present the autopsy question as if it was simply a

formality with a "Yes" answer expected almost automatically.

2. If, after a period of discussion, the physician feels the relatives are set against an autopsy, he can suggest that the chaplain of the same religious faith as the deceased be consulted.

It is important to note that this program is carried out whether the death occurs in the night or day. Often the relative, told to return to the hospital in the morning so that someone may ask his permission for an autopsy, will not return. The time to get autopsy consent is immediately after death. No matter how much help is available, the bulk of the responsibility and the best chance for approval rests with the initial interviewer.

Relatives Refuse But in only a small percentage of cases will there be no objection of any kind. Common ways of expressing an objection are:

"No! I couldn't."

"He suffered enough. Leave him alone."

"It's against my religion."

"I don't want him used for experiments."

"I want him to be buried immediately."

"I don't want him cut to pieces or mutilated."

When a patient dies, close relatives

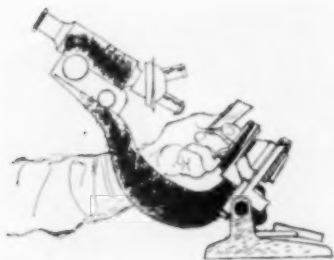
quite naturally go through an emotional crisis. In their shock and sorrow, they do not think or act normally. They also need and expect sympathy. Those who are not outwardly religious frequently become so. Thus, if the physician's approach is tactless or careless he will greatly affect his chances of getting autopsy permission.

Such expressions as: "Now I hate to ask you this . . ." or, "I know you won't want to, but please consider it . . ." usually repel the relative. A sympathetic, yet sincere and straightforward approach is best: "I know how deeply you must feel your loss. Everything that could be done was done to help your husband. We would like to perform a final examination to determine the exact cause of death and effects of our treatment . . . with your permission."

Answer Objections Avoid words like autopsy and postmortem which have unpleasant connotations in lay eyes.

If the relative refuses without giving a reason, ask for one. If it is because immediate burial is wanted, assurance can be given that the entire examination won't take more than one hour; the burial will not be delayed.

Some will say that it is against their religion. They probably won't give the specific teaching of their religion, because usually they do not know. Perhaps they have been told somewhere that an autopsy is against all religions. The fact is, no religion stands opposed to such an examination. Just the opposite. Nearly all religions consider autopsy almost obligatory if some information might be derived from the procedure which could be of assistance to any person living. And it is difficult



to conceive of an autopsy which would not teach at least one observer at least one item of value in treating another individual in the future.

It can be emphasized to the relative that a proper autopsy is not a desecration of the deceased. If necessary to go into details, such expressions as "a surgical incision is made, skillfully repaired, and no scar is visible when the deceased is dressed and prepared for burial."

Sometimes it is even necessary to assure the relative that the deceased cannot suffer because of a necropsy: "Your husband is in God's hands. What remains cannot suffer but *can* enrich our knowledge and thus serve as a blessing to humanity. Your husband would undoubtedly wish it that way I'm sure."

The offer to call in a Minister, Priest, or Rabbi is usually sufficient to convince the relative that there is no religious opposition to autopsy.

Many relatives ask for time to think about it. Experience has shown that the longer the time interval after death, the less the possibility of receiving their permission.

Frequently, the relatives will want assurance from someone else. Even though, legally, it is only one person's decision to make, he may want to call on friends and relatives for their opinion. Try to avoid this. For even if five relatives are called and four agree that permission should be given, the one refusal will be enough to convince the responsible party to deny permission.

Telling a relative that an autopsy will quickly determine the exact cause of death and so prevent red tape on insurance benefits may be helpful on occasion.

Point of Law There are important legal questions to consider in connection with autopsy permission. However, controlling state laws differ widely and each physician would be wise to read those laws which govern his hospital.

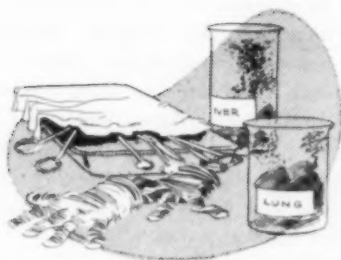
Autopsy permission should, of course, be obtained from the person legally entitled to give it—although medical examiners have the authority to order an autopsy without permission of the responsible relative.

In some cases it is obvious who is responsible. In most states a surviving spouse who is legally married at the time of death is the one who may give permission. If there is no surviving spouse, the authority usually goes to the children—unless minors.

In some cases the situation is more obscure. If the individual died a bachelor or a widow with no living parent and the only surviving relatives are cousins, brothers, or sisters, whom should you approach for autopsy permission? While there is no pat answer, since the situation has many variables, the physician can usually determine the proper individual from whom autopsy permission should be obtained.

Before any autopsy is performed, the autopsy request form is usually reviewed by the hospital administrator or the chief of service. Often the medical





superintendent must give the final okay.

Incentive Plan Some hospitals offer inducements to residents—to raise autopsy percentages. One resident's description: "In one hospital where I took resident training, the autopsy percentage reached such a low level that the hospital authorities were notified by the American Medical Association that if the autopsy percentage were not increased substantially the hospital would have difficulty remaining on the approved list."

"The board of trustees," said the resident, "decided to try something to raise the autopsy rate. First they offered us a bonus of a carton of cigarettes for each autopsy permission received. Then they added a prize of \$10 each month to the resident with the highest autopsy percentage."

The plan got quick results. "In two months," the resident reported, "the autopsy percentage of our hospital quadrupled."

Though the methods used in this program leave much for debate, and hardly apply to general practitioners, it was demonstrated that when the residents were enthusiastic about securing autopsy permission, a high percentage of autopsies was attained.

Cooperative Program Another successful method used in many high-

rated hospitals is a "responsibility and follow-up" program. One hospital, listed by the A.M.A. among the top 10 hospitals in the nation for autopsy percentage, described the method: "We have a very close cooperative function in the procurement of permission for autopsies; which function involves extensive cooperation of interns, residents, hospital administration, nursing office, attendings and the pathology department."

(1) "It is the responsibility of the resident and intern staff to contact the relatives of the deceased immediately on the first visit to the hospital, whether this be in the day-time or the middle of the night.



(2) It is the duty of the nurses to immediately notify the house staff at the time when the relatives first appear. We feel that by approaching the relatives immediately, we have a better opportunity for permission of autopsy.

(3) Our approach is one of sincerity and honesty. We don't permit misleading statements or any talks associated with insincerity of purpose to be used in the approach for the autopsy permission. We approach the relatives with the attitude of trying to help them in that they are helping us.

(4) If the relatives go home to talk the situation over with the family, we frequently go home with them and talk to the family at home. The pathologist,

himself, will frequently do this. It has been our experience that with the proper sincere approach to the family, most intelligent people will cooperate. The attending will frequently help us when there is doubt in minds of the family."

In conclusion, this hospital reports: "If there is a failure in the procurement of autopsy permission, such a failure

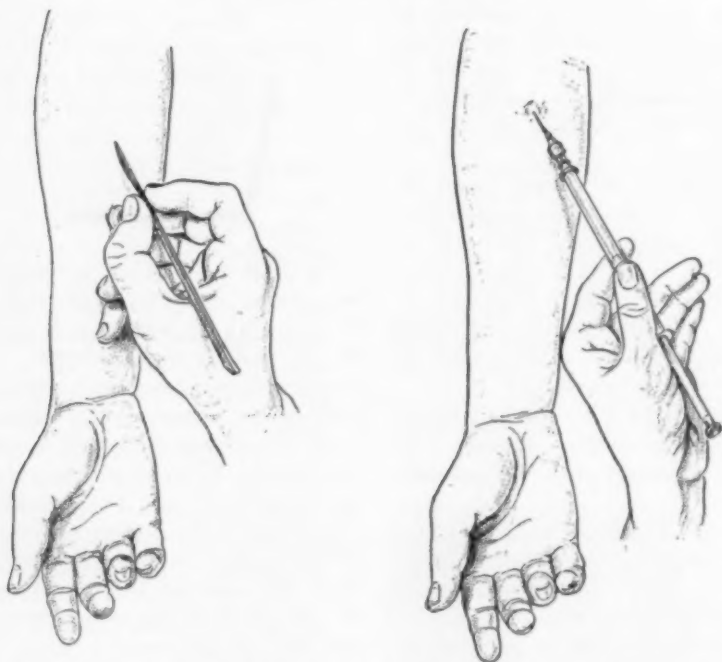
must be explained to the pathologist."

Incidentally, this hospital secures eight autopsies in every ten deaths.

Though you may not have control over hospital procedures, you can lift your own rate of autopsy permissions. Certainly the effect on your training will alone be well worth the small amount of extra effort required.

Clini-Clipping

Technic of Skin Test



A. (left) Cutaneous scratch method. The scratch is made on the forearm with a cataract knife.

B. (right) Intracutaneous method. A tuberculin syringe with a 27 gauge needle is used. The point of the needle goes into the skin.



How to Question The Spanish Patient

Few physicians are trained as experts in foreign languages. Yet most have occasion to examine and treat non-English speaking patients. And all too often the simplest direction or request becomes almost impossible to convey.

Depending on the physician's genius for artful charades and aided by pointing, loud talking in mono syllables and sympathetic grunts, an examination or explanation is usually completed. But the effort, the time involved, and the very real danger of misunderstanding makes the entire procedure of dubious merit.

The apprehensive patient becomes confused. The physician is generally worn out, often exasperated at his own failure to do a better job.

Unfortunately this problem of language barriers is common, especially in large hospitals or in medical centers located in areas populated by one or more foreign born groups. And, in many regions of the U.S., the number of foreign-born comprises an important segment of the total population. For example, Mexicans in the Southwest, French in the Northeast near the Canadian border, Italians in many industrial cities in the East and Far West, Germans in Milwaukee, Poles in the Buffalo

and Detroit areas, and a combination of nationalities in other large metropolitan centers such as New York City, Boston, Philadelphia, and Pittsburgh. A large percentage of each group cannot speak English; many others, only broken-English.

In many cases non-English speaking patients are accompanied by a younger relative acting as interpreter. But, nevertheless the language barrier goes up and the difficulty begins.

Because the average physician cannot devote the time required to master many foreign languages, MEDICAL TIMES presents in this and coming issues, a brief guide to foreign phrases in the more common languages spoken in the United States. The form is adapted from that used for Spanish phrases in the Los Angeles Hospital staff manual.

There is no need to memorize these phrases. By saving these language articles you will compile a handy and valuable aid to conduct an efficient and accurate examination, develop facts for diagnosis, and offer instructions to those non-English speaking patients whom you will be called upon to treat.

Keep your "language finder" open in front of the patient and don't worry too

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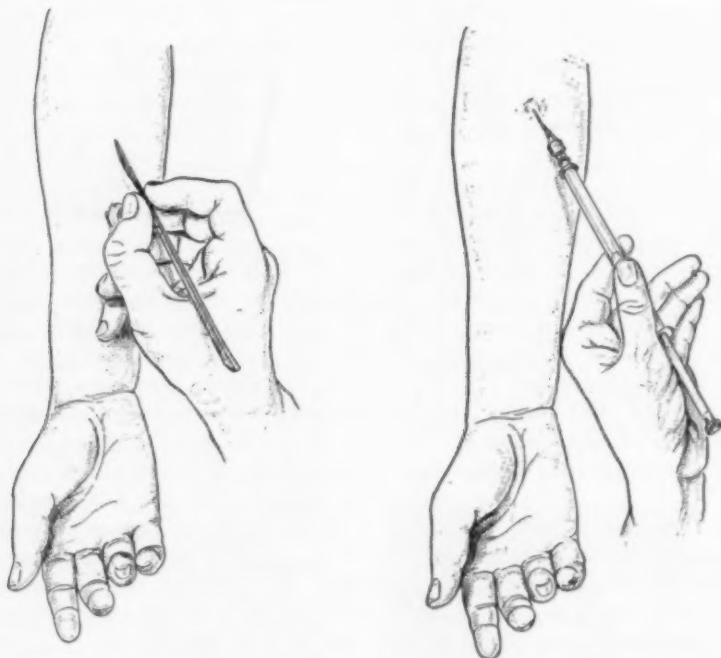
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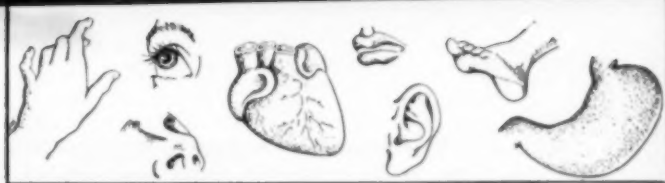
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Keep your "language finder" open in front of the patient and don't worry too

much about the pronunciation of words. The fact that you're trying will make your patient eager to help.

The completed series of language

guides, including French, Spanish, Italian, German, Polish, and Yiddish, will be bound and reprinted as a booklet available at cost.

For examination of Spanish-speaking patients.

Basic rules of Pronunciation

1. The sound of vowels is constant:

a-ah

e-eh

i-ee

o-oh

u-oo

thus-pies is pronounced pee-ehss

cuando is pronounced coo-ahndoh

oido is pronounced ohee'-doh

2. The double L or "ll" has the same sound as the Y in English, thus cuello (neck) is pronounced kooeh'-yo; alli is pronounced ah-ye.

3. H is always silent (as in the English word "hour").

4. The J is pronounced like the H in English. (San Jose is pronounced Sahn Hoh-sseh'; La Jolla is Lah Hoh-yah).

5. The letter Q is always followed by the letter U which is not pronounced. Thus—que (what or which) is pronounced keh; aqui (here) is pronounced ah-kee.

Anatomical Terms

head	-	la cabeza	neck	-	el cuello
eyes	-	los ojos	chest	-	el pecho
ears	-	los oidos	heart	-	el corazon
nose	-	la nariz	lungs	-	los pulmones
mouth	-	la boca	shoulders	-	los hombros
teeth	-	los dientes	back	-	la espalda
tongue	-	la lengua	arms	-	los brazos
throat	-	la garganta	hands	-	las manos
fingers	-	los dedos	bladder	-	la vejiga
legs	-	las piernas	rectum	-	el recto
feet	-	los pies	buttock	-	la nalga
stomach	-	el estomago			

General Questions and Answers

NOTE: The courtesy titles *Señor* (Sir), *Señora* (Madam) and *Señorita* (Miss) are used freely. They are given with only the first three examples below. For the sake of brevity they are not repeated.

Good morning, Sir

Buenos días, señor

boo' aynohs dee' ahs sayneohr'

Good afternoon, Madam

} Buenos tardes, señora

Good evening, Madam

} *boo' aynohs tahr' des sayneoh' rah*

Good night, Miss

Buenos noches, señorita

boo' aynahs noh' chays sayneohree' tah

Please

} Haga el favor de . . .

Do the favor of . . .

} *ah' gah ell jahvohr' day*

How are you?

¿Cómo está? *koh' moh esstah'*

do you feel sick

se siente mal

do you have pain

tiene dolor

—much pain

—mucho dolor

—mild pain

—poco dolor

where

en donde

here

aquí

when

cuando

how many years—months

cuantos años—mes

how many days—weeks

cuantos días—semanas

how many hours

cuantas horas

how many times

cuantas veces

where were you born

en donde nació

how old are you

cuantos años tiene

Directions to Patients

do as I do - haga así

relax - suéltese

relax more - suéltese mas

open your mouth - abra la boca

open your eyes - abra los ojos

breathe deeply - respire profundamente

breathe through your mouth - respire por la boca

hold your breath - no respire

push - empuje

cough - tosa

Diseases—Enfermedades

measles

sarampion

scarlet fever

scarlatina

chicken pox

viruela loca

small pox

viruela mala

pneumonia

pulmonia

typhoid fever

fièvre tifoïde

enteritis

fièvre intestinal

U.R.I.

resfrio

Systemic Inquiry

Ears

he is deaf
noise in the ears

esta sordo
ruido en los oídos

Head

trauma
unconscious
did you faint
are you dizzy
headache

golpe a la cabeza
insensible
se desmayo
tiene vertigo
dolor de cabeza

Eyes

sight
clear vision
near
far

vista
vista clara
cerca
lejos

Nose

coryza
did you have a nosebleed

catarro
sangro por la nariz

Throat

do you have frequent sore-throat

le quema la garganta frecuentemente

Gastro-intestinal

do you have a good appetite
do you have a poor appetite
are you nauseated
were you nauseated
do you vomit
do you have diarrhea
are you constipated
did you have a B.M. today

tiene buen apetito
tiene mal apetito
tiene basca
tuvo basca
vomita
tiene desposiciones
tiene estrenimiento
obro hoy

Jeces - excremento (caca)

black - negro

white - blanco

yellow - amarillo

brown - café

bloody - con sangre

do you have cramps - tiene retorzones

after meals - después de comer

before meals - antes de comer

did you take a laxative - tomo laxante

did you take castor-oil - tomo aceite de ricino

Cardio-respiratory

do you tire easily
are you short of breath
does your heart beat fast
do your feet swell
do you have pain in the chest
—sharp pain
—dull pain
when you breath
do you cough
do you spit
sputum
bloody sputum
have you lost weight
does someone in your family
have a cough

se cansa pronto
respira con dificultad
le late aprisa el corazon
se le hinchon los pies
tiene dolor en el pecho
—dolor agudo
—dolor sordo
—cuando resuella
tose
escupe
saliva
saliva con sangre
se ha adelgazado
tiene toz uno de sus parientes

Genito-urinary

urine - orina
do you get up at night to urinate - se levanta a orinar
does it burn - le quema la orina
chills - escalofrios
fever - calentura

Obstetrics and Gynecology

at what age did you begin to
menstruate
how many days do you flow
1 to 10

do you have a discharge
when was your last menstrual
period
are you pregnant
do you have pains with your period
how many times have you been
pregnant
how many children have you had
how much did the largest weigh
at birth
what was the duration of labor

a que edad comenzo a menstruar

cuantos dias sangra
uno, dos, tres, cuatro, cinco, seis, siete,
ocho, nueve, diez
tiene desecho
cuando fue so ultimo periodos

esta encinto
tiene dolor con sus periodos
cuantas veces ha estado encinta

cuantos niños ha tenido
cuanto peso el mas grande al nacer

cuanto tiempo dura el nacimiento

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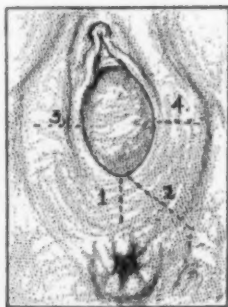
cuantos niños ha tenido
cuanto peso el mas grande al nacer

cuanto tiempo dura el nacimiento

Pediatrics

did you have any trouble with the child's delivery	tuvo usted alguna dificultad en el parto
how are the child's stools	como son las evacuaciones del niño
constipated	está estreñido
diarrhea	tiene diarrea
how many in one day	cuantas evacuaciones tiene al día
does the child eat well	come bien el niño
any vomiting	vomita alguna vez
does the face turn blue	se le pone azul la cara
does the child seem tired	aparece cansado el niño
does it hurt	le duele
it won't hurt	no le dolera
it will be finished in a minute	se terminara en un minuto
do you want a piece of candy	quieres un pedazo de dulce
did you take the temperature	le tomo la temperatura
what was the temperature	que temperatura tenía
what a big, handsome boy	que niño tan hermoso y guapo
what a beautiful little girl	que ninita tan bonita
baby	bebé
good	bueno

Clini-Clipping



EPISIOTOMY

Incisions for cutting the perineum
to prevent lacerations:

1. Medial
2. Right lateral
3. Mediolateral
4. Left lateral

Investing For The Successful Physician

This condensation of a special leaflet was prepared for Medical Times by Merrill Lynch, Pierce, Fenner & Beane, Underwriters and Distributors of Investment Securities, Brokers in Securities and Commodities.

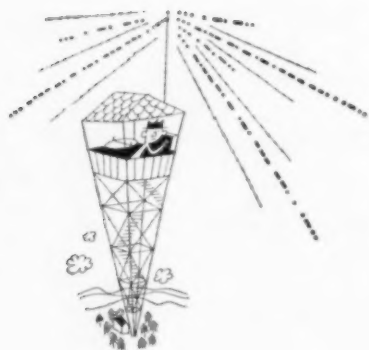
TWENTY STOCKS FOR LONG-TERM INVESTMENT

Investors, of course, can choose any of about 1,200 stocks listed on the New York Stock Exchange. In selecting the following 20 stocks, we do not mean to imply that these are the only ones which can be recommended or that they are even necessarily the best ones. There are many others that would appear equally well-suited to a program of regular purchases over a period of years. For example, almost any public utility stock like American Gas & Electric or Commonwealth Edison in Chicago or Pacific Gas & Electric. But here—for whatever interest they may have for you—are at least 20 stocks which might be expected to show good results for the investor over the years.

Aluminum Company of America
No metal has had greater attention in the past decade or so than aluminum and probably none enjoys a brighter

future. Automotive engineers, architects, builders and other metal users have turned more and more to aluminum because of its lightness and favorable price. *Alcoa*, the largest factor in the business, experienced a rapid growth during the war. In 1950, to keep up with demand, it had to launch still another ambitious program which has been substantially concluded. Additional expansion is now taking place. The costs of this program have forced *Alcoa* to restrict the proportion of its earnings which it can afford to pay out in dividends. In the long run, however, the extra plant capacity should mean

The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information, nor any opinion expressed, constitutes either a recommendation or a solicitation by the publisher or the authors for the purchase or sales of any securities or commodities.



an improved return for the investors.

American Can More manufacturers are putting more products into cans and more people are buying products (such as beer) in cans. Result: the sale of cans is increasing more rapidly than the population rise would explain. And another result: *American Can*, the largest company in the business, shows steady growth in sales and earnings. Thus, in the past five years sales have just about doubled. To be sure it keeps on growing, *American Can* engages in extensive research to develop new methods of canning or packaging new products.

American Telephone & Telegraph

Long regarded as the bluest of all "blue chips," *AT&T* continues to pay its famous dividend of \$9 a share despite steadily rising costs which force the company repeatedly to go before various state regulatory commissions and petition for rate increases. Besides the revenue it gets from operating 82% of the telephones in the country, *AT&T* is now realizing a good return from its television network service which embraces 35,000 miles of coaxial cable and radio relay. Investments in Telephone, however, can be expected to increase in value largely through reinvestment of dividends over a long period rather than through growth in the company's own earnings.

Atchison, Topeka & Santa Fe

The "Santa Fe" has rolled up an impressive income and dividend record, thanks in good part to the fact that the area in which it operates has enjoyed even more prosperity than the rest of the country (the railroad operates over 13,000 miles of track and 12,000 miles of truck routes throughout twelve southwestern states). But the "Santa Fe"

can take a bow for good management, too, because it earns about 50% more operating profit (before taxes) out of every dollar of revenue than the average railroad. Finances and equipment are both in top-notch shape. Of course, any railroad's earnings are apt to fluctuate sharply with business conditions but the "Santa Fe" has better protection than most because it carries freight over long distances in a fast-growing territory. Substantial investments in oil, land, lumber, coal, uranium and miscellaneous enterprises produce considerable outside income, thereby affording stockholders a more diversified investment than is obtainable in the average railroad stock.

Dow Chemical As one of the country's leading producers of chemicals and plastics (over 600 different products), *Dow* has rolled up a dynamic record of growth. In the last ten years sales have multiplied four times. Because of charges for accelerated amortization, earnings and dividends have not always kept pace but the company has great potential earning power. *Dow* is the largest producer of chlorine (over 25% of U. S. capacity), bromine, styrene and chemical components for high-octane gasoline. It is also the leading producer of magnesium, the lightest of all metals, which came into great demand during the last war.

Du Pont This is a chemical age and almost from the beginning of the chemical industry in the U. S. the biggest name has been *E. I. du Pont de Nemours & Co.* Aggressive and continuous research have led to the development of dozens of products which have become household words—cellophane, nylon, Freon, Orlon, to name a few. A leading producer of plastics, dyes,



"He says forest fires give him nervous indigestion—send SYNTROGEL"

SYNTROGEL® HOFFMANN-LA ROCHE INC. ROCHE PARK, NUTLEY 10 N. J.

paints and explosives, *Du Pont* is also an important factor in such relatively new fields as amino acids and titanium metal. *Du Pont* owns more than 20% of *General Motors* and the income from this holding can have an important bearing on the dividend paid on *Du Pont* stock.

Eastman Kodak Although most people think of this company wholly in terms of its photographic equipment—a field in which it clearly occupies the top position—such lines account for little more than two-thirds of the firm's business. The company has also become an important factor in the production of acetate yarns, plastics, chemicals, radiologic supplies and special military items. Such diversification can be counted on to provide some protection of earnings if public interest in photography which has expanded steadily for

20 years, should finally encounter some kind of a limit. In the past ten years, *Eastman's* dollar sales have more than doubled.

General Electric *GE* with its 135 plants is intent on maintaining its leadership in the electrical equipment field where it accounts for about 20% of total output. A \$1.5 billion building program begun at the end of World War II has been completed and an additional \$500,000,000 program will be concluded in 1956. *GE's* products include not only familiar household appliances but huge turbines and generators for the utility industry, locomotives, motors, jet engines, x-ray equipment and other industrial products. The company is also deeply involved in atomic developments and in the development and production of electronic equipment.

Name of Stock	2/6/56 Price	Current Annual Dividend Rate	Per- centage Yield	Number of Consecutive Years Company Has Paid Dividends	High and Low Price, 1955-56	
Aluminum Company of America	88	\$1.20	1.4%	18	88½	427½ ^a
American Can	46	2.00	4.3	34	48½	38¼
American Telephone	183	9.00	4.9	76	187¾	172¾
Atchison, Topeka & Santa Fe	147	8.00	5.5	17	162	121½
Dow Chemical	58	1.00*	1.7*	46	60½	43½
Du Pont	220	7.00	3.1	52	249¾	157
Eastman Kodak	79	2.40b	3.0b	55	87½	67
General Electric	57	2.00	3.5	58	57½	46¼
General Motors	44	2.16½ ^a	4.9	41	54	29½ ^a
Goodyear	63	2.00	3.1	19	66¼	50½ ^a
Gulf Oil	92	2.50*	2.7*	20	93½	61½
International Nickel	80	3.75†	4.7	22	87½	57½ ^a
Radio Corp.	43	1.50	3.4	16	55½	36¾
Safeway Stores	53	2.40	4.5	29	58¼	42½
Scott Paper	68	1.80	2.6	41	78¾	55½
Sears, Roebuck	34	1.00b*	2.96*	22	40¼	24½ ^a
Standard Oil—New Jersey	158	5.25	3.3	74	159½	106½ ^a
Union Carbide	105	3.00b	2.7b	38	116¼	80¾
United Fruit	52	3.00	5.7	58	60	51½
United Gas Corp.	31	1.50	4.8	12	35½	30

* Not including stock dividends. † In U.S. Funds, subject to Canadian withholding tax.
^a Adjusted. ^b Excluding extras.

The information set forth herein was obtained from sources which we believe reliable, but we do not guarantee its accuracy. Neither the information, nor any opinion expressed, constitutes a solicitation by us of the purchase or sale of any securities or commodities.

General Motors The world's largest builder of automobiles and trucks, *GM* has earned exceptional profits for more than a generation now. Earnings are always apt to fluctuate sharply in the automobile business, depending on general economic conditions, but even in the "off" years, *GM* has shown relatively better results than other car manufacturers. Currently responsible for about half the autos produced in this country and with a large business in foreign markets, the company also manufactures refrigerators, air conditioners, oil burners, diesel locomotives and road-building machinery, plus defense products such as tanks, guns, airplane engines, military trucks, etc.

Goodyear Tire & Rubber More cars on the nation's highways, year after year automatically have meant more tires and tubes. As one of the world's largest tire makers, *Goodyear* has prospered; sales have exceeded \$1 billion in each of the last four years and profits have increased too. More use of synthetic rubber and rayon in tires means company operations are not apt to be as seriously affected by fluctuations in prices for natural rubber and cotton. Tires and tubes account for only 57% of the company's volume; so even if tire sales should slump, other *Goodyear* lines would provide some thing of a cushion. These include not only non-tire rubber items but also chemicals and plastics. Tubeless tires are contributing importantly to sales.

Gulf Oil *Gulf* is one of the largest of our domestic oil enterprises although foreign operations account for a greater proportion of its income than with other leading oil companies. *Gulf* gets about 20% of its income from Vene-

zuela operations and another 45% from the Eastern Hemisphere, principally from a 50% interest in the Kuwait fields (Persian Gulf) where the reserves are conservatively estimated at ten billion barrels, making it one of the richest oil fields in the world. The company is pursuing an aggressive program of modernizing its refineries and other equipment and is paying for most of these improvements out of treasury funds rather than by borrowing. Nevertheless, *Gulf* remains in a strong financial position.

International Nickel Although the demand for nickel used in autos, appliances and other consumer items is subject to fluctuations, heavy defense demands assure capacity operations for *International Nickel* for some time to come.

Nickel is a vital alloy in the production of stainless steel and other metals that will resist corrosion and stand up under high temperatures—metals that are increasingly important in aviation, nuclear fission, other military products or operations. Continued research in these fields has steadily widened *International Nickel's* markets. Not only does this Canadian company produce about three-quarters of all the world's nickel but as byproducts of its operations it produces substantial amounts of copper, platinum, gold, silver and other metals.

Radio Corporation of America A leading manufacturer of television, radio and electronic equipment, *RCA* is also the sole owner of the *National Broadcasting Company* which provides service to more than 200 radio stations and almost 200 TV stations. The continued growth of television means increased set sales and increased revenue

from telecasting while the prospect of color television offers even greater promise for future growth. *RCA* also manufactures a considerable volume of military equipment and operates a radio telegraph service to 65 foreign countries.

Safeway Stores With \$1.8 billion net sales in 1954, *Safeway* is the second largest food chain in the U. S. Its some 2,000 stores are located throughout the nation and in Canada with the greatest concentration in the Midwest and Far West. The recent change in top management should benefit future earnings because of the emphasis being placed on improvement of operating margins. Coupled with this is an aggressive construction program to modernize and enlarge present stores and add new retail outlets to aid future sales growth.

Scott Paper *Scott* enjoys the enviable distinction among paper companies of having both dynamic growth and relative stability. Since its trademarked products are essentially consumer items, it has been less susceptible to changes in the economy than other paper companies whose products require conversion before utilization at the consumer level. Twenty years ago *Scott* had one plant and about \$9,000,000 business volume. In 1954 it had total sales of \$228,000,000 of which \$167,000,000 was represented by its trademarked brands produced in 14 plants which had 46 machines in operation at the end of 1955.

Sears, Roebuck As the largest distributor of general merchandise and the nation's leading mail order house, *Sears* in recent years has continually forged farther ahead of its competitors. In addition to a strong expansion pro-

gram in the U. S., *Sears* has moved aggressively into both Latin America and Canada, marketing areas with vast potentials, and more recently into Australia. In addition to its retail operations, the company's wholly-owned *Allstate Insurance Company* represents one of the fastest growing and most profitable insurance operations in the country. *Sears* also owns an interest in several manufacturing affiliates (tires, stoves, refrigerators, washers) both here and abroad. *Sears* employees own more than a quarter of the company's stock through their profit sharing fund.

Standard Oil (New Jersey)

The world's largest petroleum enterprise, *Standard Oil* (NJ) does business virtually all over the world although 90% of its earnings come from its operations in North and South America. Western Hemisphere operations are carried out primarily through control of *Humble Oil and Refining*, *Creole Petroleum*, *Imperial Oil* and *International Petroleum*. Through subsidiary companies it controls the largest reserves both of crude oil and of gas in the U. S. and the largest reserves in Latin America too. It has a leading position in Canada and is strong in Europe, the Far East and the Middle East where it has a 30% interest in the *Arabian American Oil Company*. Domestically, *Standard* owns *Esso Standard Oil Company* which sells principally along the Atlantic Seaboard and it has a 50% interest in *Standard-Vacuum* and in the *Ethyl Corp.*, as well as large interests in several pipelines. Continuous research to improve refining processes and get more and better-grade products out of crude oil has paid off handsomely.

Union Carbide & Carbon Known generally because of such familiar products as Bakelite, Vinylite, Prestone and Eveready batteries, *Union Carbide* is the second largest producer of industrial gases, carbon products, flashlight batteries and ferro-alloys, used in the production of alloy steels. The company is also a leader in the production of plastics, one of its most recent achievements in this field having been the development of the popular "squeeze bottle" made of polyethylene. Always a leader in research to develop new products, *Carbide* is now also actively engaged in nuclear research and operates plants at Oak Ridge and Paducah for the U. S. Atomic Energy Commission. Sales have shown a strong uptrend over the years and the company can be expected to go on growing because of the general expansion which is anticipated in the chemical and plastics field.

United Fruit Integration, geographical diversification and coordination of supply-demand factors have brought a high degree of earnings consistency and strongly entrenched finances to what otherwise would be quite a hazardous business involving as it does weather and political risks.

Through its increasing efficiency, *United Fruit* has changed bananas from a luxury to a widely consumed fruit freely available the year round at reasonable prices. Bananas are outstanding foods for all ages—especially infants and older people, both increasingly important segments of the population. No senior securities come ahead of the 3,300,000 common shares. Dividends, continuous since *United Fruit* was founded in 1899, have provided generous yields and indications suggest plenty of room for growth exceeding that of the population.

United Gas Operator of a completely integrated pipeline system, *United Gas* is the largest handler of natural gas in the world and owned or had under contract more than 13% of the entire known gas reserves of the nation at the beginning of 1956. The company serves the "Gulf South" area and the growth of this territory has been matched by a like rapid increase in gas sales and revenues. In addition to its pipeline operations and valuable reserves, diversification has been obtained through large holdings in a sulphur and potash company and an ammonia products concern, both of which offer a promising future.

Clini-Clipping

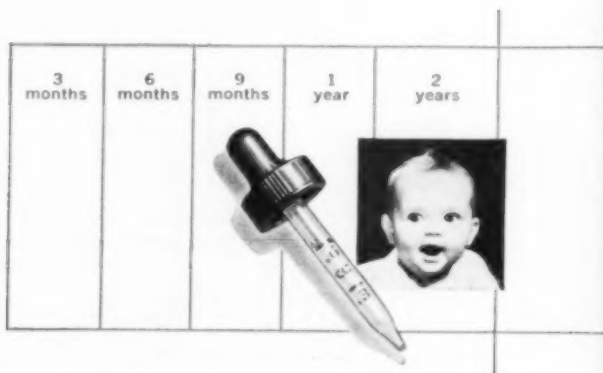
Method of recording the venous pulse. The suction cup is applied over the jugular bulb on the right side of the neck.



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10 nutritionally significant vitamins including B₆ and stable B₁₂
... and A, D, C, B₁, B₂, niacin, biotin, pantothenic acid







Deca-Vi-Sol

a pleasant flavored, stable solution containing 10 nutritionally significant vitamins

In 15 cc., 30 cc. and 50 cc. bottles

vitamin family for the vital first decade

—providing assured protection against vitamin inadequacies of "normal" diets during the vital first decade

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a good-tasting orange flavored emulsion containing 10 nutritionally significant vitamins

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small, easy-to-take capsules containing 10 nutritionally significant vitamins

Bottles of 30

It's easier to specify

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and in the critical first months of life



select the level of vitamin protection the baby needs



Deca-Vi-Sol	10 nutritionally significant vitamins including B ₆ and stable B ₁₂ ...and A, D, C, B ₁ , B ₂ , niacinamide, biotin, pantothenic acid	
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Deca-Vi-Sol, like Poly-Vi-Sol® and Tri-Vi-Sol® is

- *highly stable*—refrigeration not required
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Relaxation without Drowsiness, Depression or Lethargy

DOSE: 1 or 2 tablets after each meal.

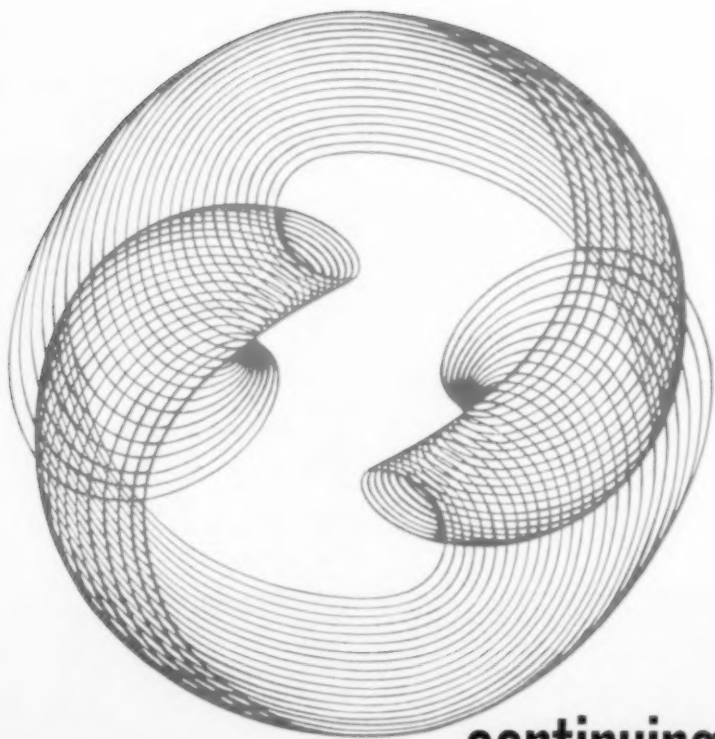
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for rheumatoid arthritis • intractable asthma
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allergic and inflammatory eye and skin disorders



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significant reduction in electrolyte side effects

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MODERN THERAPEUTICS

Irritable Colon Syndrome

It is generally agreed that the irritable colon syndrome is an abnormality of the motor and/or secretory functions of the colon caused by psychogenic factors mediated by the sympathetic and parasympathetic centers. As seen by sigmoidoscopy or radiography the mucous membrane of the colon is frequently edematous, reddened, granular, and the

location of excessive mucus. Not only is this type of colon responsible for abnormal bowel function, but for a large variety of other discomforts which frequently suggest the presence of organic disease. M. M. Lieberthal of the Bridgeport Hospital (Connecticut), *Connecticut State Medical Journal* [19:86 (1955)], has issued a report on 129 patients out of a group of 351 with this disorder. All of these patients had had attacks of abdominal pain or distress for at least a year, and all had diarrhea as a major type of bowel function. These patients were selected from the larger group because in them irrelevant factors seemed less likely to confuse the issue. Psychogenic factors

**Effective analgesic, antipruritic
action in Otic Conditions**

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- ... Rapid, intense and prolonged analgesic action with the complemental anesthetics, zolamine and Eucupin.*
- ... Prompt, sustained relief in pruritus of the external canal.
- ... Nonirritating—nonsensitizing.

**Supplied in 15 cc.
dropper bottles**

White Laboratories, Inc., Kenilworth, N. J.

MODERN THERAPEUTICS

were present in all instances, but careful examination showed that none suffered from organic disease. These patients were given an opportunity to discuss their difficulties freely, and were shown how to eat, sleep, and exercise regularly without disrupting their daily schedules. A low residue diet was prescribed: for medication, each patient received an antispasmodic, usually trantentine and, in some instances, small doses of phenobarbital. Bowel function was controlled by Konsyl, a hydrophilic colloid derived from blond psyllium seed. It was given in a dose of one teaspoonful in four to six ounces of

water two or three times daily, the idea being to create a non irritating bulk that would encourage a more normal peristaltic pattern. In evaluating the effects of treatment, partial improvement could not be measured, and these cases were classed in the "unsatisfactory" group. Of the 129 patients who followed the prescribed regimen, 76.7 per cent achieved a satisfactory general result. Observations were made on the effect of the Konsyl by not giving it to all patients for the entire period of the test. It was established that patients who had received Konsyl reached their point of maximum subjective improvement much faster than those who had not received it.

—Continued on page 100a

For Middle and External Ear Infections

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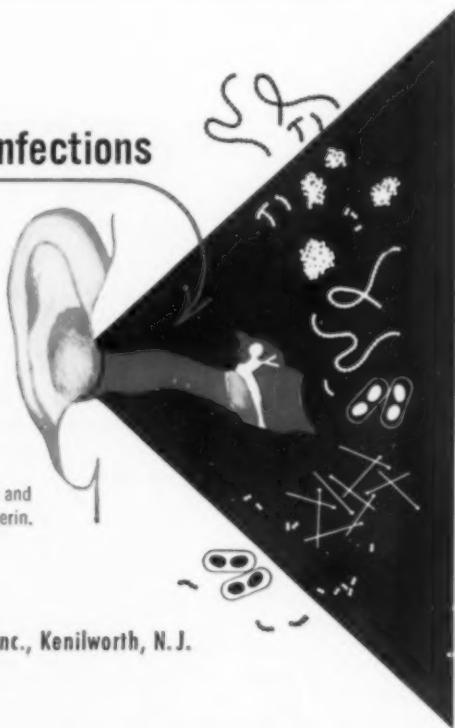
Chemical debridement—infection site rapidly cleansed—odors reduced, and waste material removed.

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A stable solution of Carbamide (Urea), Sulfanilamide and Anhydrous Chlorobutanol in high specific gravity glycerin.

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MODERN THERAPEUTICS

—Continued from preceding page

Diamox in the Treatment of Glaucoma

Diamox (acetazoleamide) is a heterocyclic sulphonamide which acts as an inhibitor of carbonic anhydrase in the kidney. Since this substance has been demonstrated in the ciliary body and iris, it is postulated that diamox by its inhibitory action would lower the concentration of bicarbonate entering the aqueous; the aqueous sodium concentration would be lowered, followed by a fall in osmotic pressure causing less water influx and a lowering of intraocular pressure. The author, Geoffrey Serpell of Melbourne, *Medical Journal of Australia* [2:846 (1955)], in his

observation of 20 cases of various types of glaucoma, noted only one in which no fall in intraocular pressure followed the administration of diamox. The usual dose was 500 milligrams *statim*, the same dose being repeated in twelve hours, then followed by 250 milligrams at twelve-hourly intervals. The results in acute congestive glaucoma are clear-cut and dramatic, the fall in tension being greater the higher the initial level. Secondary glaucoma is greatly helped by diamox, but the underlying disease must, of course, be treated at the same time. In chronic glaucoma, the results of diamox are more difficult to judge, and further investigation is indicated. However, it appears that diamox provides beneficial adjuvant therapy in glaucoma.

—Continued on page 104a

AVOID RE-INFECTION FROM HIM^{IN} TRICHOMONIASIS



KARNAKY reports in treating vaginal trichomoniasis "...approximately 39 to 47 percent of the resistant cases are re-infections from the sexual partner."¹

Symptom-free carriers. Most infected husbands of infected wives are asymptomatic. They are "...none the less a potential source of re-infection in wives successfully treated."²

Protect the wife. Karnaky recommends in recurrent cases of vaginal trichomoniasis that the husband wear a condom at coitus for as long as four to nine months. By the end of this time the trichomonads he harbors will usually die out.³

Prescribe high quality condoms. Take advantage of Schmid product improvements to win cooperation of the husband. According to the preferences and problems of your patient,

prescribe Schmid condoms by name.

XXXX (FOUREX)[®] skins are made from the cecum of the lamb and are pre-moistened. They feel like the patient's own skin and do not dull sensory effect. RAMSES[®] natural gum rubber condoms are different—transparent, tissue-thin, yet strong.

Your prescription of Schmid condoms circumvents embarrassment, assures fine quality, provides essential protection.

Treat the wife. The Davis technique† with VAGISEC[®] liquid shows better than 90 per cent success in clinical data obtained by more than 150 physicians.⁴ Unusual three-way attack with VAGISEC (originally "Carlendacide") actually explodes trichomonads. Liquid and jelly.

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prophylactics division

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References: 1. Karnaky, K. J.: *Urol. & Cutan. Rev.* 45:812 (Nov.) 1938. 2. Lanceley, F., and McEntegart, M. G.: *Lancet* 1:668 (Apr. 14) 1953. 3. Karnaky, K. J.: *J.A.M.A.* 155:876 (June 26) 1954. 4. Davis, C. H.: *West. J. Surg.* 61:53 (Feb.) 1955.

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specific
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(critically essential L-lysine with vitamins in therapeutic amounts)

To speed convalescence following
surgery • illness • injury

Protein and vitamin depletion, due to excessive catabolism and restricted diets, can now be prevented and treated with Cerofort Tablets. Administered in conjunction with a therapeutic diet, Cerofort Tablets can help the patient convalescing from serious disease, injury or surgery to a quicker recovery. Cerofort Tablets combine:

L-lysine to raise poor quality cereal proteins — which appear consistently on the convalescent's tray — to the value of good quality animal muscle proteins.

All the essential vitamins in therapeutic dosage.

Just 1 CEROFORT TABLET t.i.d. with meals supplies:

L-Lysine Monohydrochloride	790 mg.*	Niacinamide	100 mg.
Vitamin A	25,000 U.S.P. units	Calcium Pantothenate	20 mg.
Vitamin D	1,000 U.S.P. units	Vitamin B ₁₂ Activity (Cobalamin)	4 mcg.
Thiamine Mononitrate	10 mg.	Folic Acid	1.5 mg.
Riboflavin	10 mg.	Ascorbic Acid	300 mg.
Pyridoxine Hydrochloride	2 mg.	*Equivalent to 600 mg. L-lysine	

first with lysine in the pharmaceutical field

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KOAGAMIN[®]

parenteral hemostat

**saves blood
saves time
saves transfusions**

in surgery—Given prophylactically in 567 surgical cases, a single injection of KOAGAMIN was found "...to reduce blood loss and to facilitate surgical procedures...often obviate[s] the use of transfusion..."^a

in emergency—Acting directly on the clotting mechanism, KOAGAMIN arrests any capillary or venous bleeding in minutes—not hours, unlike vitamin K.

in inaccessible bleeding—By controlling hemorrhage of systemic origin, KOAGAMIN saves time and blood without the hazard of thrombosis or toxic reaction—no untoward effect ever reported.

^a Joseph, M.: Am. J. Surg. 87:905, 1954.

KOAGAMIN, an aqueous solution of oxalic and malonic acids for parenteral use, is supplied in 10-cc. diaphragm-stoppered vials.



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Tetracycline is notable among broad-spectrum antibiotics for its solubility and stability. And, clinical trials have established that tetracycline is an efficient antibiotic against those diseases due to susceptible microorganisms.

Now available with the best taste in broad-spectrum therapy

Tetrabon[®] homogenized mixture
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Newest liquid form; unusual fruit flavor; standardized at Pfizer Laboratories. Each 5 cc. teaspoonful supplies 125 mg. tetracycline. Bottles of 2 fl. oz., packaged ready to use.



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42,000,000
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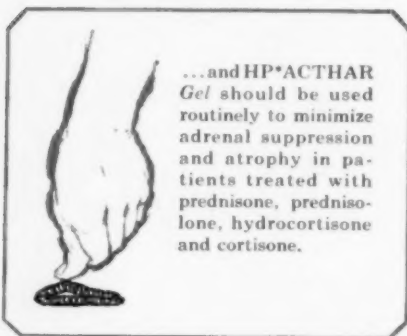
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The Armour Laboratories brand of purified
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Unsurpassed in safety and efficacy

In a series of patients treated continuously with Armour ACTH for at least 5½ years¹...

- Each responded with a maintained increase in cortical function
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...and HP*ACTHAR Gel should be used routinely to minimize adrenal suppression and atrophy in patients treated with prednisone, prednisolone, hydrocortisone and cortisone.

HP*ACTHAR[®] Gel is the most widely used ACTH preparation
*Highly purified

1. Wolfson, W. Q.: Mississippi Valley M. J. 77: 66, 1955.



THE ARMOUR LABORATORIES
A DIVISION OF ARMOUR AND COMPANY • KANKAKEE, ILLINOIS

MODERN THERAPEUTICS

—Continued from page 100a

Diphtheria and Diphtheria Carrier State Treated with Erythromycin

Diphtheria antitoxin is effective in neutralizing the exotoxin elaborated by *Corynebacterium diphtheriae*, but toxin continues to be produced until the bacteria cease to multiply. These bacteria persist in the throat for an average of 33 days in patients treated with antitoxin alone. M. W. Beach and his associates of Charleston, South Carolina, *Pediatrics* [16:335 (1955)] have studied the effect of erythromycin on the clinical course and bacterial flora of the nose and throat in acute cases of diphtheria and on the value of the drug in the chronic carrier state. Patients with a diagnosis of untreated diphtheria were given erythromycin and diphtheria antitoxin. Diphtheria carriers were treated with erythromycin alone. Erythromycin ethyl carbonate

—Continued on page 108a

MEDICAL TEASERS

Solution to puzzle on page 43a

MOPE	FAVUS	SEMI
YSYN	EDEMA	EMET
OSID	LANES	LIRE
NANOSOMA	SALTER	
	RENI	DANO
PHASE	SIFTINGS	
HETEROPTERA	ORE	
OMAR	LEATA	SCAN
SAX	PERIOSTITIS	
ELYTROID	UTILE	
	RIMS	SALO
SESAME	ANTALGIC	
AMIC	TABOO	OLOR
MODE	EGLON	GENU
ALAR	REEDY	YEAS

Altepose.

keeps your patient co-operative on a diet

MAJOR ADVANTAGES: 1. Overcomes excess craving for food. 2. Reduces tissue water retention. 3. Alleviates nervousness and irritability.



Prompt results from ALTEPOSE therapy will encourage your patient to remain on the diet you prescribe. ALTEPOSE works in three effective ways to help your patient reduce.

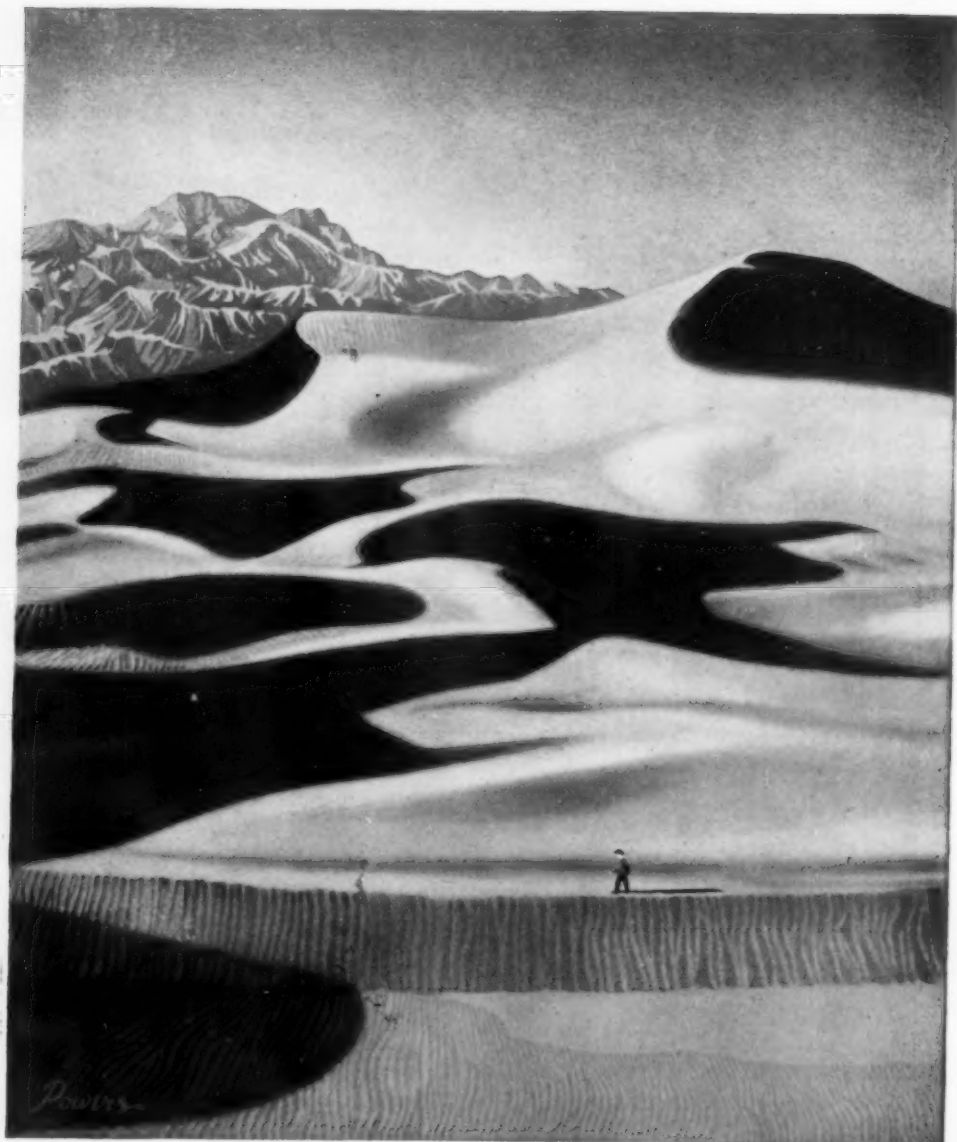
The *Propadrine*® content controls the appetite, yet causes less central nervous stimulation than amphetamine. *Delvinal*® lessens the irritability so often associated with stringent diets. *Thyroid* brings about weight loss *early* in the dietary period,

through release of tissue-bound water.

Each ALTEPOSE Tablet contains 50 mg. 'Propadrine' HCl, 40 mg. thyroid and 25 mg. 'Delvinal' vinbarbital. Supplied in bottles of 100 and 1000.



Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.



escape



Betasyamine[®] . . . for an escape from fatigue . . . in your aging patients.

Betasyamine carries its therapeutic attack to the very source of a basic biochemical inadequacy, typical of your chronically fatigued and tense aging patients.

Carlson¹ associates the aging process with progressively impaired neuromuscular function; Dixon² links this decline with chronic tension and fatigue brought about by depleted values of phosphocreatine. Betasyamine is not a sedative, not a stimulant drug. It is true replacement therapy. Betasyamine, containing betaine and glycocyamine, precursors of phosphocreatine, serves to replenish these vital stores to optimal levels needed for vigorous body functioning. In this manner, Betasyamine re-energizes the tense, exhausted patient. By its purely physiologic action, Betasyamine offers a new-found means to meet the problem of autumnal years, whether they be environmental, physical, emotional.

With Betasyamine, escape from fatigue in aging patients is achieved; a new will to keep going, stronger than ever.

Average Dosage: 1 Effervescent Packet: 1 tablespoonful Emulsion; or 5 Tablets three times daily at mealtimes.

Supplied: Effervescent Packets (New) — 24's; Emulsion — 16 fl. oz.; Tablets — 200's.

References: 1. Carlson, A. J., in Stieglitz, E. J.: *Geriatric Medicine*, ed. 3, Philadelphia, J. B. Lippincott Company, 1954, p. 71. • 2. Dixon, H. H.; Peterson, R. D.; Dickel, H. A.; Jones, C. H., and West, E. S.: *West J. Surg.* 60:327 (July) 1952.

Amino Products Division • International Minerals & Chemical Corporation
Chicago • San Francisco • Los Angeles

escape escape

MODERN THERAPEUTICS

—Continued from page 104a

(Ilotycin) was administered in an average dosage of 40 mg./kg./day given at four-to-six-hour intervals. The duration of treatment averaged ten days. Of the 43 patients with active diphtheria, 29 showed consistently negative cultures after 24 hours of treatment; all showed negative cultures within eight days. Five patients had positive throat cultures for *C. diphtheriae*, but showed no clinical evidence of the disease; they were classified as carriers. Three had negative cultures after 24 hours of treatment, one, after three days and one, after nine days. The erythromycin was well tolerated and no untoward reactions oc-

curred. This drug is advocated as an adjunct to and not as a substitute for antitoxin in the treatment of acute diphtheria.

Intravenous Administration of Pitocin and Induced Labor

Pitocin infusion intravenously administered has given impetus to the elective induction of labor. W. J. Ratzan and A. Shulman report the use of this agent in more than 250 inductions of labor at the Barnert Memorial Hospital, Paterson, New Jersey, *Obstetrics and Gynecology* [6: 493 (1955)]. Their technic, they believe, permits a wide margin of safety both in elective induction and in stimulation of labor; (1) Oxygen tank, mask, ether dispenser

—Continued on page 110a

PUBL. AUG. 1954

2ND EDITION

LEGAL MEDICINE PATHOLOGY AND TOXICOLOGY

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It covers such a wide variety of subjects as investigation at the scene of death; identification; signs of death; the technic of autopsy; unexpected and sudden natural death; types and complications of trauma; blunt force injuries; stab wounds; bullet wounds; traumatic and gas asphyxia; thermic trauma; pregnancy; illegitimacy; abortion; infanticide; virginity; impotence; examinations of semen, blood, hair and other material; clinical examination for organic, inorganic and miscellaneous poisons; rights and obligations of physicians; malpractice; insanity; insurance and survivorship; and a technical section of analytic methods for determining the presence of and identification of various poisons.

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Each slow-dissolving tablet contains 1 mg. Rauwiloid (alseroxylon) and 3 mg. Veriloid (alkavervir)...permits lower, better-tolerated doses of Veriloid to exert full effect. Initial dose, one tablet t.i.d., p.c.

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IN SEVERE, OTHERWISE INTRACTABLE HYPERTENSION

Provides smoother, less erratic response to oral hexamethonium and permits greatly reduced dosage of the latter drug (up to 50% less). Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, $\frac{1}{2}$ tablet q.i.d.

Riker

LOS ANGELES

MODERN THERAPEUTICS

—Continued from page 108a

and cone should be at hand before the intravenous administration of Pitocin is started. (2) The patient's pulse and blood pressure, and the fetal heart tones must be recorded before the infusion is begun. Frequency, duration, and character of uterine contractions should be noted, as well as the station of the presenting part, dilatation and effacement of the cervix, and the condition of the membranes. (3) The pelvis should be clinically evaluated to rule out a major degree of pelvic contraction or malpresentation. (4) An infusion of 500 cc. of 5 per cent glucose in water is started in a large vein with the flow adjusted to 8-10 drops per min-

ute. Pitocin, 0.5 cc., is placed directly into the infusion flask. The rate of flow is maintained for 30 minutes and is then increased to 14-16 drops per minute. (5) the fetal heartbeat is checked every five minutes for the first half-hour, every ten minutes for the second half-hour, and then every 15 minutes.

The Pitocin should be continued past the third stage of labor to avoid postpartum relaxation of the uterus. Indications for induction are: preeclampsia, premature separation of placenta, diabetes, fetal death, ruptured membranes, convenience. Pitocin infusion for induction of labor may be considered suitable if: 1. the patient is not in labor; 2. good labor pains would be desirable; 3. the cervix is ripe; and 4.

—Continued on page 113a



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MODERN THERAPEUTICS

—Continued from page 110a

there are no contraindications to vaginal delivery.

Antibiotics 1955

Under this heading, Henry Welch of the Division of Antibiotics, Food and Drug Administration, Washington, D. C., *International Record of Medicine and General Practice Clinics* [168:449 (1955)] has reviewed some of the highlights of the antibiotics according to their present status. Starting with penicillin, he lists 18 drugs which he designates as "Useful antibiotics of the 3,000 to 4,000 that have been described." In order of their appearance they are:

Penicillin	Fumagillin
Tyrothricin	Oxytetracycline
Streptomycin	Viomycin
Bacitracin	Nystatin
Chloramphenicol	Erythromycin
Polymyxin	Carbomycin
Dihydrostreptomycin	Tetracycline
	Anisomycin
Chlortetracycline	Cycloserine
Neomycin	

Penicillin and the broad-spectrum antibiotics (chlortetracycline, oxytetracycline, tetracycline, chloramphenicol) not only serve therapeutically, but are used as feed supplements to promote animal growth. Of the antibiotics available, those used most extensively are streptomycin, dihydrostreptomycin, the broad-spectrum antibiotics and penicillin. In the case of the latter drug, rapid absorption and excretion of its soluble salts have led to the development of some so-called insoluble salts: procaine penicillin being the one most used. Both streptomycin and dihydrostrepto-

mycin used in combination with other agents are employed for the treatment of a variety of infections, their primary single use is in the treatment of tuberculosis: the usual dosage, by intramuscular injection, is one gram, given daily or twice weekly. In the tetracycline group, chlortetracycline is most active with gram-positive organisms, and tetracycline with the gram-negative group. With all of these drugs, side-effects are an ever present problem. Blood dyscrasias following the use of chloramphenicol is an example, so, also, is sensitization to penicillin. The question of penicillin ingested with milk from cows treated with the antibiotic is a matter requiring further study and consideration. Cycloserine, not yet available for clinical use, is the subject of intensive investigation, particularly as to its mechanism of action.

The Effect of Reserpine on Gastric Acidity

Rauwolfia serpentina and its various alkaloids have found widespread use in

—Continued on page 114a

Diagnosis, Please!

ANSWER

(from page 25a)

NON-OPAQUE GALL BLADDER STONES

Note faceted radiolucent cluster within the apacified gall bladder.

MODERN THERAPEUTICS

—Continued from preceding page

seemingly unrelated conditions. These drugs have sedative properties that have popularized their administration for a number of forms of neuropsychiatric disorders. Antihypertensive and bradycardic effects have suggested their use in treating cardiovascular diseases. While the exact mode of action of the Rauwolfia compounds is unknown, they appear to possess sympatholytic and/or parasympathomimetic activity which is apparently central in origin. Gastrointestinal hyperactivity is seemingly one of the less desirable effects of these drugs. M. L. Clark and E. M. Schneider of Oklahoma City *Gastroenterology* [29:877 (1955)] observed the effects

of reserpine on a group of 24 hospitalized patients, five of whom had duodenal ulcer. A Levin tube remained in the stomach of each patient during the period of observation. Aspirated gastric contents were examined for one and one-half hours before 1 mg. of reserpine was administered intravenously. Determinations of gastric hydrochloric acid content were made by a modification of the Bockus technic. A rise in the mean free hydrochloric acid after the injection of reserpine when compared to the mean maximum baseline level was significant after 15 minutes and was sustained for a four-hour period. The response to reserpine was substantially similar to the patients with or without duodenal ulcer. The authors believe that, based on this study, Rauwolfia and its active alkaloids should

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be administered with caution to patients with peptic ulcer.

Chlorpromazine in the Treatment of the Senile Patient

Results of the use of chlorpromazine in the treatment of mentally disturbed patients prompted a study of its effect when administered to a group of 22 hospitalized patients ranging in age from 72 to 93 years. All had been in a state of agitation for six months or more; they were confused and intractable. Chlorpromazine was given orally in amounts of 10 mg. three times daily. It was increased to a total dosage of 75 mg. daily only if no reaction had occurred from the initial dosage, but was decreased again when a response was noted. All patients received the drug for at least two months. Drowsiness was

the most common side-effect, observed particularly in those patients having received the larger dosage. Especially in the early days of treatment, hypotensive responses occurred in several patients who were watched carefully, otherwise untoward reactions were negative. With the exception of one man who showed only slight improvement, the group were markedly benefited by the therapy after the first week: the amelioration of symptoms continued. All patients slept better as a result of taking chlorpromazine even though insomnia in several had been long-standing. The state of agitation was greatly reduced; they became quiet, well-oriented, friendly, and responsive to requests. According to Louis A. Terman of Chicago who reported the study in *Geriatrics* [10:520 (1955)],

—Continued on page 118a

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Beck, T.A.: Internat. Rec. Med. & Gen. Pract. Clin. 168:807 (December) 1955

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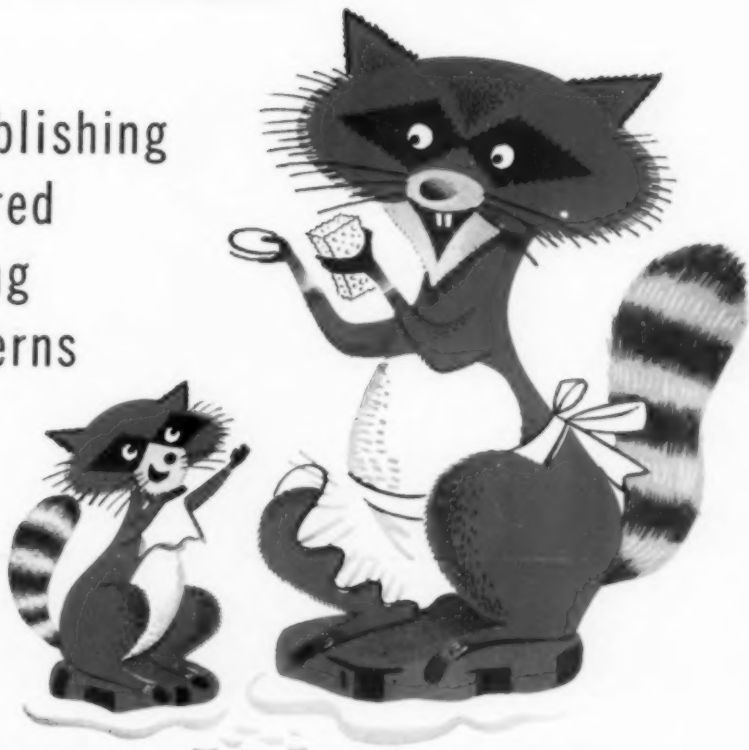
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1. Eisfelder, H.W.: *Am. Pract. & Dig. Treat.*, 5:778 (Oct., 1954).

2. Sebrell, W.H., Jr.: *J.A.M.A.*, 152:42 (May, 1953).

3. Sherman, R.J.: *Medical Times*, 82:107 (Feb., 1954).

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MODERN THERAPEUTICS

—Continued from page 115a

chlorpromazine is a relatively safe and useful drug for improving manageability of the agitated senile patient.

Carbomycin

W. E. Herrell of Lexington, Kentucky, *International Record of Medicine and General Practice Clinics* [168:463 (1955)], in reporting on the present status of carbomycin has comprehensively reviewed the literature on this newer antibiotic. From a standpoint of side-effects, carbomycin has a low toxicity, the principal reaction noted was gastrointestinal irritation. In addition to testing the activity of carbomycin against various microorganisms, its cross resistance and synergism in relation to other antibiotics has been the object of close investigation, a seemingly practical measure for supplying needed data in the event of shifting medication from one agent to another. A similarity exists between carbomycin and erythromycin; their antibacterial spectra are closely parallel. Both substances are highly active against gram-positive and gram-negative cocci, are moderately active against strains of *Hemophilus*, and are essentially inactive

—Continued on page 122a

"MEDIQUIZ" ANSWERS

(from page 75a)

1(B), 2(A), 3(C), 4(D), 5(C),
6(A), 7(C), 8(D), 9(D), 10(D),
11(A), 12(C), 13(B), 14(C), 15(C),
16(B), 17(D), 18(D), 19(B), 20(C).

MEDICAL TIMES

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during adolescence...
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Nicotinamide (Niacinamide)	100 mg.
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Vitamin A	25,000 units
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minerals:

Iodine	0.15 mg.	
Manganese	1.0 mg.	
Cobalt	0.1 mg.	
Potassium	5.0 mg.	Calcium 105.0 mg.
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Iron	15.0 mg.	
Copper	1.0 mg.	(The minerals are supplied as inorganic salts.)
Zinc	1.5 mg.	
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*de Planter Bowes, A.: Nutrition of Children During Their School Years, *Am. J. Clin. Nutrition* 3:254, 1953.

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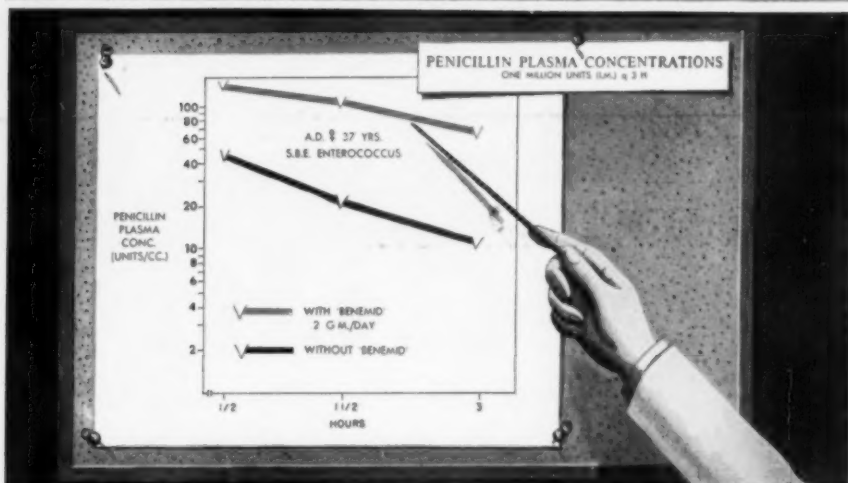


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References: 1. *Antibiotics & Chemotherapy* 2:555, 1952. 2. A.M.A. Exhibit, June 1951.



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MODERN THERAPEUTICS

—Continued from page 118a

against coliform and enteric bacilli. On a weight for weight basis, erythromycin is from four to sixteen times more active than carbomycin against susceptible strains of bacteria. Subcultures of *M. pyogenes* and of certain strains of streptococci in the presence of increasing concentrations of either of these antibiotics resulted in rapid and marked increase in resistance to both antibiotics. It is believed that although high concentrations of carbomycin do not appear in the serum, the antibiotic is present in various tissues. This inability to obtain high concentrations in the serum has doubtless retarded clinical use of carbomycin. Considerable data are available on the use of this drug for infections of the respiratory and urinary tracts. While favorable response was elicited in some instances, the consensus seems to be that at the present time carbomycin is not a replacement for some of the older antibiotics.

Prednisone and Prednisolone in the Treatment of Rheumatoid Arthritis

The consensus is that prednisone and prednisolone are identical as to their antirheumatic action, that they have a potency three to five times that of cortisone and hydrocortisone, and that in effective therapeutic doses these substances have less sodium-retaining effect than have the two older compounds. In London, F. D. Hart and his co-workers, *Lancet* [2:998 (1955)] conducted a study to investigate the effectiveness of these new hormones over cortisone acetate in rheumatoid arthritis when given

—Continued on page 128a

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Iodine	0.15 mg.
Manganese	1.0 mg.
Cobalt	0.1 mg.
Potassium	5.0 mg.
Molybdenum	0.2 mg.
Iron	15.0 mg.
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Iodine	0.15 mg.
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Molybdenum	0.2 mg.
Iron	15.0 mg.
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Magnesium	6.0 mg.



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MODERN THERAPEUTICS

—Continued from page 122a

in smaller doses, and, also, to compare the toxic effects. Fourteen patients with rheumatoid arthritis were transferred back and forth from dosages of cortisone and prednisone and/or prednisolone. Neither patients nor nurses knew when the medication was changed. Results were based on the patients' estimates, on edema, on joint tenderness, and on the power of the grip. General improvement was noted in ten patients during the medication with prednisone, the other four remained unchanged. No patient showed deterioration while taking prednisone. Long-term treatment, of course, may change the present picture, but from a short-term study ranging from four days to ten weeks, prednisone and prednisolone gave evidence of

being useful drugs in the short-term suppressive treatment of rheumatoid arthritis. No toxic effects were observed by the authors, although they are known to occur.

Piperazine Citrate in the Treatment of Ascariasis in Children

A report is published of the results of treating 17 patients with ascariasis with a single dose of piperazine citrate (Antepar), *Pediatrics* [16:115 (1955)]. The drug was administered in the form of orange-flavored syrup containing 100 mg. of piperazine hexahydrate per milliliter. The dosage employed was 70 mg. per pound of body weight. The drug was given in a single dose with no purgation before or after treatment, and no fasting. Clyde Swartzwelder and his co-workers who conducted the study

—Continued on page 130a

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- anxiety-tension
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REFERENCES: *Feinblatt et al., Medical Times
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is based upon
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*References available.

LIPAN Capsules contain: Specially prepared, highly activated, desiccated and defatted *whole* Pancreatic Substance; Thiamin HCl, 1.5 mg.; Vitamin D, 500 I.U.

Available: Bottles 180's, 500's

COMPLETE LITERATURE AND REPRINTS
UPON REQUEST, JUST SEND AN R. BLANK.

Spirit & Co., Inc.
WATERBURY, CONN.

MODERN THERAPEUTICS

—Continued from page 128a

found that there was complete elimination of the eggs from the stools in 16 of the 17 patients treated, and a 93 per cent reduction in the egg count in the remaining patient. Both mature and immature ascarids were eliminated from the intestine by the piperazine citrate. The worms were intact and still alive when passed after therapy. It is believed that they lost their ability to maintain traction against the mucosa and were eliminated from the intestine by peristalsis. The parasites were completely gone within one to four days after the single dose of piperazine citrate. No untoward reactions to the drug were observed. A single dose of this agent is believed to be effective and safe for use in the elimination of *Ascaris lumbricoides*.

Neomycin in the Treatment of Pyeloureterocystitis Cystica

Pyeloureterocystitis cystica is recognized as a progressive disease of obscure etiology which is apparently secondary to chronic urinary tract infection. Numerous forms of treatment have afforded only temporary amelioration of symptoms. R. S. Cox, Jr. (MC), U.S. Army and his associates at the Letterman Army Hospital, San Francisco, *Journal of the American Medical Association* [158:1430 (1955)] report the case of a 37-year-old white man with chronic pyelonephritis due to *Aerobacter aerogenes* which had proved unresponsive to various forms of treatment. Therapy was started with 0.5 Gm. of neomycin, given intramuscularly, twice

—Continued on page 133a

MEDICAL TIMES

dietary inadequacy
during adolescence...
one of many indications for

myadec[®]

high potency vitamin-mineral formula

"Physicians, dentists, and research workers report a high percentage of unfavorable physical conditions closely related to dietary inadequacy....The 13 to 15 age level showed the greatest deviations from good nutritional status and dietary adequacy."^{*}

MYADEC furnishes, in a single capsule, therapeutic potencies of nine important vitamins and is supplemented by eleven essential minerals and trace elements for normal metabolic function.

Each MYADEC Capsule provides:

vitamins:

Vitamin B ₁₂ Crystalline	5 mcg.
Vitamin B ₂ (Riboflavin)	10 mg.
Vitamin B ₆ (Pyridoxine Hydrochloride)	2 mg.
Vitamin B ₁ Mononitrate	10 mg.
Nicotinamide (Niacinamide)	100 mg.
Vitamin C (Ascorbic Acid)	150 mg.
Vitamin A	25,000 units
Vitamin D	1,000 units
Vitamin E	5 I.U.

minerals:

Iodine	0.15 mg.
Manganese	1.0 mg.
Cobalt	0.1 mg.
Potassium	5.0 mg.
Molybdenum	0.2 mg.
Iron	15.0 mg.
Copper	1.0 mg.
Zinc	1.5 mg.
Magnesium	6.0 mg.

Calcium . . . 105.0 mg.
Phosphorus . . 80.0 mg.
(The minerals are supplied as inorganic salts.)



MYADEC Capsules are supplied in bottles of 30, 100, 250, and 1,000.

^{*}de Planter Bowes, A.: Nutrition of Children During Their School Years, *Am. J. Clin. Nutrition* 3:254, 1955.

PARKE, DAVIS & COMPANY DETROIT, MICHIGAN



*"combining the traditional
with the new!"*



R-S-THE SODATE

THEOBROMINE SODIUM ACETATE

plus **RAUWOLFIA** *serpentina*

FOR ESSENTIAL HYPERTENSION

FOR YEARS *Thesodate*, the original enteric-coated tablet of Theobromine Sodium Acetate, has been used extensively for cardiac and circulatory disorders such as coronary artery disease which is often accompanied by hypertension.

NOW COMBINED with the whole powdered root of *Rauwolfia serpentina* (no single alkaloid or fraction having shown the beneficial effects of the whole crude root), R-S-THE SODATE offers a more ideal treatment for essential hypertension whether or not coronary artery disease is present. In most cases, its use should effect gradual but sustained blood pressure reduction and a lowered pulse rate if it has been elevated.

SYMPTOMS OF HYPERTENSION should also be alleviated by the tranquilizing effect of one of *Rauwolfia*'s alkaloids. A sense of well-being usually occurs within a few days after starting the patient on R-S-THE SODATE. Shortly after, the normotensive effect becomes more noticeable, and thus in most cases the patients will enjoy both symptomatic and systemic improvement.

R-S-THE SODATE TABLETS, enteric-coated to prevent gastric distress, are taken at meals and at bedtime. The bedtime tablet prepares the patient for early morning activities.

Each enteric-coated tablet contains:

Theobromine Sodium Acetate (7½ gr.) 0.5 Gm.

Rauwolfia serpentina 50 mg.

Supplied in 100's and 500's

available for
**CORONARY
ARTERY
DISEASE**

in following formulas

TABLETS THE SODATE
7½ gr. or 3¼ gr.

WITH PHENOBARBITAL
7½ gr. with ½ gr.
7½ gr. with ¼ gr.
3¼ gr. with ½ gr.

WITH POTASSIUM IODIDE
5 gr. with 2 gr.

WITH POTASSIUM IODIDE
AND PHENOBARBITAL
5 gr. with 2 gr. and ¼ gr.

all formulas
ENTERIC-COATED

Supplied in
100's and 500's



Brewer

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BREWER & COMPANY, INC. WORCESTER 8, MASSACHUSETTS U.S.A.

For samples just send your Rx blank marked 11-RTM-3

MODERN THERAPEUTICS

—Continued from page 130a

daily and 1 Gm. each of streptomycin and dihydrostreptomycin daily. Within 48 hours, there was no microscopic pyuria, urine cultures were sterile, and there were no further urinary symptoms. After one week, the streptomycins were discontinued and the dosage of neomycin changed to 0.5 Gm. daily for an additional week. One-quarter gram was then given twice a week for a month and once a week for another two weeks. Occasional recurrences of gross pyuria cleared promptly after a single dose of 0.5 Gm. of neomycin. No serious side-effects were observed.

Neomycin has been considered a toxic drug, but recent evidence indicates that it is safe to use if the following criteria are met: (1) a neomycin-sensitive organism is present that does not respond to less potentially toxic agents, (2) renal function is good, and (3) dosage is limited to one gram per day for eight to ten days.

Study Discloses Factors Which May Cause Wound-Healing Failures

Why some human wounds fail to heal may be partially explained by two local causative factors, according to two physicians here.

Drs. Paul W. Sack and Robert D. Barnard report on a study of resistant ulcerations in *The New York State Journal of Medicine* [55:2956 (1955)].

The problem often results from the presence, in the exudate, of median molecule-size mucoproteins which agglutinate the patient's own erythrocytes, they submit. This may cause "plugging" of the capillaries and may similarly

attack tissue cells to cause inflammation. Experimental and clinical data supporting the thesis are presented by the authors.

When chlorophyll derivatives are combined with the wound exudates, the hemagglutinating and inflammatory properties of the exudate are inhibited, they report. The previously little understood beneficial healing effects of chlorophyll derivatives in chronic lesions result, in part at least, from these two actions.

Drs. Sack and Barnard conducted a clinical trial to test their concept. They treated 15 previously resistant ulcerations including decubitus and varicose with a chlorophyll derivative ointment, an ethical preparation called Chloresium (Rystan Co., Mt. Vernon, N.Y.).

The results of these clinical trials and studies of exudates taken serially from the lesions indicated a correlation between the healing progress achieved and the reduction of hemagglutinating and inflammatory properties.

While the inhibition of these factors by chlorophyll derivatives was demonstrated and the "mechanism" of the healing agent partially explained, the authors submit that more extensive trials are necessary to confirm the concept.

Sterility of Laundered Fabrics

It is the opinion of Sherrill and Kinard, *J.A.M.A.* [159:1478 (1955)] that nothing would be gained by adoption of any procedure involving the use of home-washing equipment by personnel in the hospital nursery who are not versed in the fundamentals of the detergent processes that obtain. The use of

—Continued on page 134a

MODERN THERAPEUTICS

—Continued from preceding page

1.5 oz. of powdered laundry soap, which is the normal capacity of home-washing equipment and which is deemed adequate by Watson and co-workers, *J.A.M.A.* [155:1579 (1954)], hardly would be expected to produce the results obtained by professional diaper services using more than twice this quantity of soap and alkaline scouring agents and softened water under carefully controlled conditions. Workers in the field of detergency research long have recognized the marked superiority of commercial laundering procedures over home washing in terms of such performance characteristics as soil removal,

whiteness retention and stain removal. The bacteriological cleanliness of the laundered fabrics is of prime consideration. Experimental evidence, under controlled conditions, shows for the diaper service 99.9% reduction in total bacteria counts as compared to only 91.4% reduction in the home-washing procedure.

Dehydroisoandrosterone in the Treatment of the Inadequate Personality

The use of dehydroisoandrosterone, the "beta fraction" of the adrenocortical steroids, has been reported for the treatment of adult schizophrenics and for inadequate personality in juveniles: the response to the treatment was better in

—Continued on page 140a

Through The Menstrual Years of Life-

THE frequency with which the menstrual life of so many women is marred by functional aberrations that pass the borderline of physiologic limits, emphasizes the importance of an effective uterine tonic and regulator in the practicing physician's armamentarium.

In ERGOAPIOL (Smith) with SAVIN the action of all the alkaloids of ergot (prepared by hydro-alcoholic extraction) is synergistically enhanced by the presence of apiol and oil of savin. Its sustained tonic action on the uterus provides welcome relief by helping to induce local hyperemia, stimulating smooth, rhythmic uterine contractions and serving as a potent hemostatic agent to control excessive bleeding.

May we send you a copy of the booklet "Menstrual Disorders", available with our compliments to physicians on request.

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INDICATIONS

Amenorrhea, dysmenorrhea, menorrhagia, metrorrhagia and in obstetrics.

ERGOAPIOL (SMITH) with SAVIN

• THE PREFERRED UTERINE TONIC •

DOSAGE

1-2 cap. 3-4 times daily.

SUPPLIED

in ethical pkgs. of 20 caps.

Upjohn

Relax

the nervous,
tense,
emotionally unstable:

Reserpoid

(Pure crystalline alkaloid)

TRADEMARK FOR THE UPJOHN BRAND OF RESERPINE

Each tablet contains:

Reserpine 0.1 mg.
 or 0.25 mg.
 or 1.0 mg.
 or 4.0 mg.

The elixir contains:

Reserpine 0.25 mg.
per 5 cc. teaspoonful

Supplied:

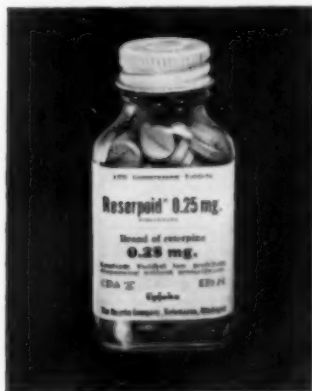
Scored tablets

0.1 and 0.25 mg. in bottles of
100 and 500

1.0 and 4.0 mg. in bottles of 100

Elixir in pint bottles

The Upjohn Company, Kalamazoo, Michigan



HARRY C. MOORES

CHAIRMAN OF THE BOARD

announces: on March 1, 1956

THE NAME OF
M & R LABORATORIES
WILL BE CHANGED TO
ROSS LABORATORIES

This action is taken in the tenth year after the death of Stanley M. Ross, to commemorate the contribution of the co-founder of our company. The career of Mr. Ross coincided with the development of pediatrics as a science. Through close liaison with the physician and the research scientist, men of industry such as Mr. Ross aided in the development and application of new knowledge in scientific infant feeding that resulted in a constant reduction in the incidence of nutritional problems and consequent infant mortality.

The change in name signifies no change in organization, in personnel or in policy. On the contrary, we herewith reaffirm the principles which have guided us during the past 53 years.

Promotion of our product, Similac, will be restricted, as it always has been, to the medical professions. We hold inviolate the prerogative of the physician to prescribe infant feeding according to his judgment, and believe that only he has the training and experience necessary to select and prescribe the formula and other elements of the dietary, and to direct the preventive care of the infant.

Because of the close interrelation between nutrition and disease states, and because nutrition becomes particularly critical in disease conditions, the proper application of the findings from research in nutrition requires the special skill of a



physician. The infant's parents in general are not equipped (while the physician is) :

- (1) *to judge the adequacy of research quoted in support of claims for infant feeding products,*
- (2) *to evaluate the conclusions drawn from the data presented,*
- (3) *to determine whether the evidence is cited in context,*
- (4) *to view the findings presented in proper perspective.*

Ross Laboratories believe that no action should be taken to produce pressures from lay sources designed to influence the physician's prescription of product or application of medical concept. Efforts to create brand preference or to publicize medical concepts for commercial gain through the use of mass media can only result in undesirable pressure on the physician from patients. Lay advertisement of brands of infant formulas or foods intended for the first year of life infringes on the right of the physician to prescribe as his judgment directs.

We believe it incumbent on Ross Laboratories to encourage and to participate in fundamental and applied research in the field of nutrition. The M & R Pediatric Research Conference program will be carried on as the Ross Pediatric Research Conferences. This program is but one instrument for achieving this objective. We shall continue with renewed vigor our efforts to provide means for further enhancement of the practice of medicine for infants and children.

H. C. Moore.



ROSS LABORATORIES COLUMBUS 16, OHIO

Effective local treatment

**FOR BEDSORES
AND OTHER
CHRONIC
ULCERATIONS**



May 15th. Severe decubitus ulcer over femoral greater tuberosity in a terminally ill patient.

WHITE'S VITAMIN A & D OINTMENT

Routine application of White's Vitamin A & D Ointment promotes granulation and epithelization in *stubborn bedsores, chronic ulcers of varied etiology, burns and slow-healing wounds* that do not permit primary surgical closure. It is also useful as a protective and therapeutic covering in miscellaneous skin conditions characterized by abnormal dryness.

White's Vitamin A & D Ointment provides vitamins A and D in a pleasant lanolin-petrolatum base that does not stain tissues or bed clothes.

R in 1½ oz. or 4 oz. tubes;
1 lb. or 5 lb. jars.



WHITE LABORATORIES, INC., KENILWORTH, N. J.



July 12th. After 2 months of treatment with White's Vitamin A & D Ointment, ulcer crater reveals healthy granulation tissue and evidence of beginning epithelial repair.



every B-complex factor

plus good taste

LEDERPLEX[†]

Vitamin B Complex *Liquid* LEDERLE

Each teaspoonful (4 cc.) contains:

- Thiamine HCl (B₁) 2 mg.
- Riboflavin (B₂) 2 mg.
- Niacinamide 10 mg.
- Folic Acid 0.2 mg.
- Pyridoxine HCl (B₆) 0.2 mg.
- Pantothenic Acid 2 mg.
- Choline 20 mg.
- Inositol 10 mg.
- Soluble Liver Fraction 470 mg.
- Vitamin B₁₂ 5 mcgm.

Provides the necessary *good taste* "plus" to a complete B complex formula with B₁₂ and Folic Acid.

A flavor that does not "wear thin" or go "flat" over the prolonged dose regimen necessary with vitamin supplementation.

LEDERPLEX is also available in Capsule, Tablet and Parenteral forms.

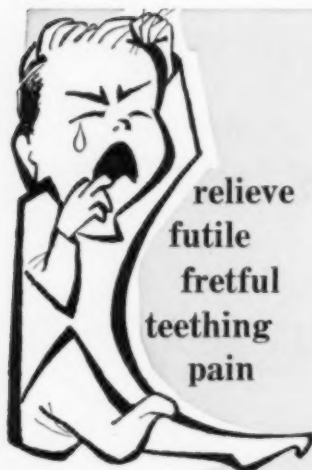


LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY PEARL RIVER, NEW YORK

[†]REG. U.S. PAT. OFF.

MODERN THERAPEUTICS

—Continued from page 134a



PRESCRIBE NUM-ZIT, A RATIONAL, LOCAL SOOTHING LOTION

NUM-ZIT, dabbed on baby's tender gums, soothes pain almost instantly. Acts locally, with no danger of systemic overdosage or side actions. Avoids central depressants, analgesics or sedatives.

NUM-ZIT contains benzocaine, alcohol, menthol, glycerine, in a pleasant tasting base. Sanitary applicator in each package.

NUM-ZIT Teething Lotion

FREE supply for clinical test; send coupon.

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P.O. Box 86, Dept. MT-3
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Send me trade package NUM-ZIT
Teething Lotion for clinical test.

_____, M.D.
Street _____
City _____ Zone _____ State _____

the latter group. H. Douglas Lamb of the University of Minnesota, *Journal Lancet* [75:109 (1955)] decided to investigate the effects of the drug when administered to eleven college students with inadequate personalities as shown by a complete lack of initiative and self-confidence. The patients were not told the nature of the drug nor what type of reaction to expect. They were seen at weekly intervals, at which time a week's supply of dehydroisoandrosterone was given to them. The average dosage was 25 mg. on alternate days. When the therapist believed the course to be complete, the student was asked to write a brief description of the effects of the medication. Eight patients, from their reports and from observation, were markedly improved from a standpoint of initiative, self-confidence, level of academic work, socializing capacity, and a more realistic outlook generally. Three students did not respond to the drug: two of these were schizophrenics. While the group studied was small, the results of therapy were considered definitely encouraging, and further study would appear to be amply warranted.

Cortisone in the Treatment of Ulcerative Colitis

A preliminary report on the treatment of chronic ulcerative colitis with cortisone has been followed by a record of results observed after a period of 18 months. Five patients out of the original group of 210 failed to complete the study. One hundred nine of the patients were given cortisone in an average

—Continued on page 144a

MEDICAL TIMES

blue at breakfast?

BONADOXIN[®]

(BRAND OF MECLIZINE HCl, PYRIDOXINE HCl)

*stops morning
sickness
...often "within
a few hours"¹*

Fifteen investigators have now confirmed BONADOXIN's efficacy. In 287 patients treated for nausea and vomiting of pregnancy, BONADOXIN was "of great benefit in 90.8% of the cases." Complete relief was often afforded "within a few hours."¹

Each BONADOXIN tablet contains:

Meclizine HCl.....25 mg.
Pyridoxine HCl.....50 mg.

Mild cases: One BONADOXIN tablet at bedtime. Severe cases: One at bedtime and on arising.

In bottles of 25 and 100, prescription only. Also Indicated in post-radiation sickness, nausea following surgery, Ménière's syndrome.

1. Groskloss, H. H. et al.: Bonadoxin[®]: a unique control for nausea and vomiting of pregnancy. Clin. Med.: 2:885 (Sept.) 1955.



Chicago 11, Illinois

now
available

3

forms
of

MYCOSTATIN

Squibb Nystatin

THE FIRST WELL TOLERATED ANTIFUNGAL ANTIBIOTIC



VAGINAL TABLETS

*effective in
vaginal moniliasis*

Each vaginal tablet contains
100,000 units of Mycostatin
and 0.95 Gm. of lactose.
Packages of 15.



OINTMENT

*effective in
monilial infections
of the skin*

100,000 units of Mycostatin
per gram. 30 Gm. tubes.



ORAL TABLETS

*effective in
intestinal moniliasis*

Each tablet contains
500,000 units of Mycostatin.
Bottles of 12 and 100.

*also available: broad spectrum antibacterial therapy PLUS
prophylaxis against monilial superinfection*

MYSTECLIN CAPSULES

250 mg. Steclin (Squibb Tetracycline) Hydrochloride
and 250,000 units Mycostatin. Bottles of 12 and 100.

SQUIBB

*MYCOSTATIN® *MYSTECLIN® AND *STECLIN® ARE REGISTERED TRADEMARKS



Here lies the body of Caleb Spline,
Dead because of his long belt line.

Years before he heard Death's knell,
He could have been saved with Obocell.

SHORTEN HIS BELT LINE . . . LENGTHEN HIS LIFE LINE

Obocell[®]

doubles the power to resist food

Each Obocell tablet contains:

d-Amphetamine Phosphate (dibasic)5 mg.

Nicel[®]160 mg.

*Irwin-Neisler's brand of high viscosity methylcellulose.

To serve your patients today—Call your pharmacist
for any additional product information you may need to
help you prescribe Obocell.

IRWIN, NEISLER & COMPANY • Decatur, Illinois

Selective cough control through...



PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.

MODERN THERAPEUTICS

—Continued from page 140a

dosage of 100 mg. daily; 101 patients received a placebo. Short-term results of the therapy were noted at the end of six weeks. The group having received the cortisone were markedly better than members of the control group; about two out of five of the former group were in clinical remission. The effects of cortisone on the usual complications of the disease were noted carefully: there was no perforation of the bowel; there was one case of massive hemorrhage; several patients had pyogenic complications, and three had ocular disturbances. The pattern was substantially the same at the end of nine months, and eighteen months. Although first attacks are usually the more dangerous, patients with first attacks received greater benefit from the cortisone. The authors, S. C. Truelove and L. J. Witts, *British Medical Journal* [2:4947 (1955)], after this longer observation period, believe that cortisone is a valuable addition to the medical treatment of ulcerative colitis, and are of the opinion that the use of larger doses as well as longer periods of treatment merit further investigation.

Rauwolfia Derivatives for the Treatment of Mentally Disturbed Patients

A group of mentally disturbed patients were given Rauwolfia derivatives, and the results observed by H. Azima and his associates of Montreal, *Canadian Medical Association Journal* [73: 366 (1955)]. The 100 patients studied were unselected, ranged in age from 20 to 70 years, and their reactions had been diagnosed as *neurotic, manic-*

depressive, or schizophrenic. The medication, chiefly reserpine, was given in combined oral and intramuscular forms, and ranged from 0.5 to 15 mg. daily for periods from one week to four months. All cases were followed up from three to twelve months. The over-all analysis revealed that 27 per cent of the group showed improvement, 62 per cent were apparently unchanged or showed very slight improvement, and in 11 per cent symptoms were aggravated. In general, nearly all patients experienced a fall in blood pressure from 5 to 15 mm. Hg. Side-effects were of frequent occurrence, but were not serious. About one-fourth of the *neurotic* patients responded very favorably to small doses of Rauwolfia alkaloids. Some patients in this group improved on combined medication with reserpine and chlorpromazine. It appeared that the combined drugs required smaller dosages thus modifying side-effects. Reactions to the therapy in the *manic-depressive* group indicated that states of agitation and excitement were alleviated, but in cases of depression without agitation the treatment was contraindicated. In the *schizophrenic* group, the impression was that certain forms of this disturbance as well as of other mental abnormalities react favorably, but further investigation is needed to determine the means of selecting responsive types.

ACTH and Cortisone for the Treatment of Blood Disorders

The Panel on the Haematological Applications of ACTH and Cortisone, of which L. J. Witts is chairman, have issued a further report, *British Medical Journal* [2:455 (1955)] of their findings with the use of ACTH (corticotrophin) and cortisone in a variety of

—Continued on page 146a

...selective inhibition of the cough reflex with **TOCLASE**

BRAND OF CARBAPENTANE CITRATE

*non-narcotic, non-opiate, highly palatable
antitussive agent*

TOCLASE EXPECTORANT COMPOUND

Sugar-free, pleasant-tasting, cherry-flavored, amber-colored syrup. *Bottles of 1 pint.*

TOCLASE SYRUP Pleasant-tasting, cherry-flavored, red-colored syrup. *Bottles of 1 pint.*

TOCLASE TABLETS For convenience at work or recreation. 25 mg. tablets, *bottles of 25.*

Pfizer

fresh mixed

FOLBESYN^{*}
VITAMINS LEDERLE

B+C
COMPLEX

*assures
full potency*

Separate packaging of dry vitamins and diluent (mixed immediately before injection) assures the patient a more effective dose. May also be added to standard IV solutions.

Dosage: 2 cc. daily.

Each 2 cc. dose contains:

Thiamine HCl (B ₁)	10 mg.
Riboflavin (B ₂)	10 mg.
Niacinamide	50 mg.
Pyridoxine HCl (B ₆)	5 mg.
Sodium Pantothenate	10 mg.
Ascorbic Acid (C)	300 mg.
Vitamin B ₁₂	15 mcgm.
Folic Acid	3 mg.



LEDERLE LABORATORIES DIVISION

AMERICAN Cyanamid COMPANY

PEARL RIVER, NEW YORK

^{*}REG. U.S. PAT. OFF.

MODERN THERAPEUTICS

—Continued from page 145a

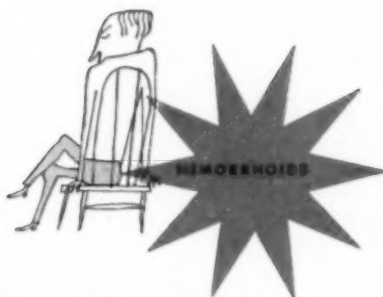
haematologic conditions. They confirm their earlier conclusion that acquired haemolytic anaemia and idiopathic thrombocytopenic purpura derive prolonged benefit from the administration of these drugs. Apparently patients are relieved of their symptoms for periods of months or even years by the continuous administration of hormones. Of the total number of 43 cases of acquired haemolytic anaemia treated, partial or complete response was obtained in 39. Adequate dosage would appear to be a pertinent factor in the results: patients exhibiting the best results received from 200 to 300 mg. of cortisone daily. Out of 26 cases of idiopathic thrombocytopenic purpura, complete response was obtained in 12, and partial response in 10. In a group of patients with aplastic anaemia, small number appeared to have less bleeding from the gums, otherwise results were negative. In a group of 49 children with acute leukaemia, there were 13 complete remissions and 21 partial responses. Of 52 adults treated, 22 had partial or complete remissions. In acute leukaemia, this form of therapy compares favorably with other methods.

Disulfiram in the Treatment of Alcoholics

In an attempt to formulate a comprehensive plan of therapy for alcoholics, the Division of Alcohol Studies and Rehabilitation in Virginia used disulfiram (Antabuse) as an adjunct in the treatment of 1,187 patients who volunteered to take the drug. The author, E.

—Concluded on page 148a

MEDICAL TIMES

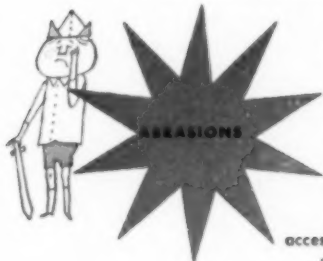


nonsensitizing . . . rapid acting . . . topical anesthetic

XYLOCAINE® OINTMENT ANTRA

(Brand of lidocaine*)

a new form of the widely accepted Xylocaine Hydrochloride solution



• Xylocaine Ointment provides unusually rapid, and deeply penetrating anesthesia without the drawback of toxicity, sensitization or irritation. Xylocaine is unique in this respect.

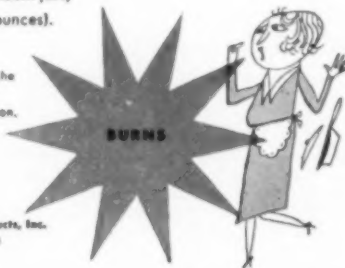
• For use in the control of itching, burning and other dermatologic distress. May also be applied liberally on skin and accessible mucous membranes to prevent pain during examination or instrumentation.

• Available in a water soluble, nonstaining vehicle as 2.5% and 5% Xylocaine base in collapsible tubes or wide-mouth jars, each containing 35 grams (approx. 1.25 ounces).

Xylocaine Ointment is now made available at the request of many physicians, surgeons, and anesthesiologists who routinely use Xylocaine Solution.



Astra Pharmaceutical Products, Inc.
Worcester 6, Massachusetts



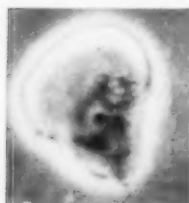
*U. S. Patent No. 2,441,498

HOW VAGISEC LIQUID

EXPLODES

TRICHOMONADS IN 15 SECONDS

WITH the Davis technic,[†] using VAGISEC[®] liquid and jelly, flare-ups of vaginal trichomoniasis rarely occur. VAGISEC liquid actually *explodes* trichomonads within 15 seconds after douche contact.¹ Better than 90 per cent apparent cures follow use of this new trichomonacide developed as "Carlendacide," by Dr. Carl Henry Davis, noted gynecologist.²



CONTACTS



EXPLODES

No trichomonad escapes — Three chemicals in VAGISEC liquid combine synergistically to weaken the cell membrane, to remove lipids, and to denature the protein. The parasite imbibes water, swells and explodes.

The Davis technic — The physician uses VAGISEC liquid as a vaginal scrub at the office. He prescribes VAGISEC liquid and jelly for concomitant use at home.

*Infected husbands re-infect wives*² — Use of a condom breaks the infection cycle.² A prescription assures the protection afforded by Schmid quality condoms — RAMSES,[®] the finest possible rubber prophylactic; or XXXX (FOUR-EX)[®] skins of natural animal membranes, pre-moistened.

References: 1. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955. 2. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955.

JULIUS SCHMID, INC.

gynecological division

423 West 55th Street, New York 19, N. Y.

VAGINEC, RAMSES and XXXX (FOUR-EX) are registered trade-marks of Julius Schmid, Inc. †Pat. App. for

MODERN THERAPEUTICS

—Concluded from page 146a

C. Hoff of Richmond, has reported the results obtained on 1,020 of these patients treated between 1949 and 1953, *Connecticut State Med. J.* [19:793 (1955)]. A group of 484 alcoholic patients acting as controls were treated during the same period according to the same therapeutic plan, but received no disulfiram. All patients were alcoholics with uncontrolled drinking habits, usually of several years' duration. No patients were given the drug who showed considerable renal, hepatic, cardiac, pulmonary or metabolic dysfunction or who were mentally deteriorated. The initial dose of disulfiram was 1.5 Gm.; the second day dosage was 1.0 Gm., and the third and fourth days, 0.5 Gm. On this regimen, side-effects were absent or very moderate. In most cases, a disulfiram-alcohol reaction was observed on the fourth day. It was found that the "disulfiram group" showed a better response than the control group: in the former, a significantly higher proportion had one relapse or more, but appeared to have established a stable alcohol-free pattern finally. Of the patients responding satisfactorily to follow-up visits, 928 "disulfiram cases" showed improvement in 84 per cent; among 333 controls, the percentage was 79.8. It would appear that disulfiram is a useful adjunct in a comprehensive plan of therapy for alcoholics amenable to voluntary treatment.

BUY UNITED STATES SAVINGS
BONDS

Of all the hundreds of papers that have been published on the subject of Medical Ultrasonics, one of the most enlightening to the G.P. is the report by another small town General Practitioner, published in the August issue of Medical Times magazine. This paper covers the use of ultrasonic therapy in the treatment of patients who had previously failed to respond to other methods. The report includes cases of:

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HYPERTROPHIC ARTHRITIS OF THE SPINE ASTHMA
PERIPHERAL VASCULAR DISEASE HERPES ZOSTER



report:

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MT-3-55

NEWS AND NOTES

Annual Convention of Pennsylvania Academy of General Practice

The Board of Directors of the Pennsylvania Academy of General Practice

have announced that the Eighth Annual Convention of The P.A.G.P. will be held at Bedford Springs, Pennsylvania, on the 18th, 19th, and 20th of May, 1956.

In keeping with tradition, this meeting will combine a Scientific Session with planned and organized activities for the wives and children. In this way the Family Doctor in Pennsylvania can have a family week-end.

Diphtheria Control can be improved

A two-year Canadian study indicates that there are good ways of stopping up the "chinks in our immunization armor" against diphtheria.

Umm-m-m-m...tastes just like



Com

Two important methods are inoculation within the first six months of life and the use of "guinea pig tests."

The study, by Louis Greenberg, Ph.D., Ottawa, and Rene Benoit, M.D., Montreal, appears to be the first real proof that the guinea pig tests are an accurate way of telling how effective an individual diphtheria toxoid will be in humans.

The researchers gave diphtheria shots to infants from two to six months old and to guinea pigs. Comparison of the results in the two groups "clearly" showed that the guinea pig test is a valid indicator of a toxoid's value for man, they said in a recent issue of the *J. of the American Medical Association*.

Lack of standardization of various companies' products and occasional outbreaks of the disease indicate that there are still some weaknesses in the control of diphtheria, they said.

"There is, therefore, every reason for continued and increasingly vigorous programs of immunization. For this purpose, it is important that only the most effective toxoids be used," they said.

These can be obtained by utilizing the guinea pig test, establishing the most effective dose for humans, and setting up a program of toxoid standardization, the researchers said.

The study showed that the response

—Continued on page 154a

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(HYDRABAMINE PENICILLIN G)

New Ready-Mixed Penicillin Suspension



Step by Step Therapy Advances

The latest advance in the
treatment of anemia is



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THE CLINICALLY PROVED COBALT ANTIANEMIC

This advance in anemia therapy is the unique ability, possessed only by cobalt, to stimulate the bone marrow. With Roncovite, patient well-being naturally accompanies rapid and parallel increases in RBC's and hemoglobin.

"These studies show that oral cobalt therapy can stimulate erythropoiesis . . ."

—Gardner, F. H.: *J. Lab. & Clin. Med.* 41:56 (Jan.) 1953.

"... 57 of the 58 [pregnant] patients (98.2 per cent) maintained or improved their hemoglobin [with Roncovite] . . ."

—Holly, R. G.: *Obst. & Gynec.* 5:562 (April) 1955.

With Roncovite . . . "most patients felt an increased sense of well-being when hemoglobin levels were elevated."

—Hill, J. M.; LaJous, J., and Sebastian, F.J.: *Texas J. Med.* 51: 686 (Oct.) 1955.

DOSAGE

One tablet after each meal and at bedtime. Children 1 year or over, 0.6 cc. (10 drops); infants less than 1 year, 0.3 cc. (5 drops) once daily diluted with water, milk, fruit or vegetable juice.

LLOYD BROTHERS, INC.

CINCINNATI 3, OHIO

"IN THE INTEREST OF MEDICINE SINCE 1870"

NEWS AND NOTES

—Continued from page 151a

in infants to the diphtheria toxoid was related to the size of the dose given—the bigger the dose, the greater the immunizing effect. However, too large doses are wasteful and sometimes can produce an adverse effect. Further study is necessary to establish the most effective dose for man, they said.

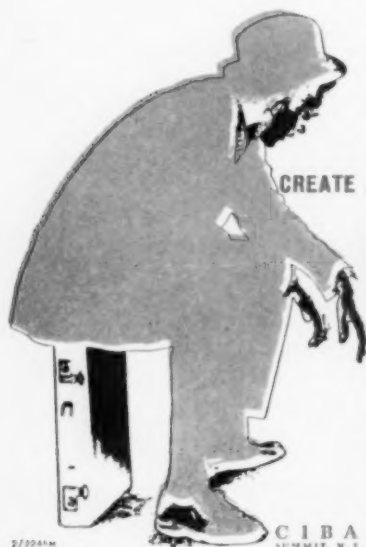
Alum adsorbed toxoids should be used instead of plain fluid types for more effective control, they said. The scientists found that the fluid preparations, even when given in three doses, were not as effective as the alum types. In addition, many infants do not return to health clinics for their second or third inoculations.

Most newborn babies have a natural immunity to diphtheria during the first months of life, but only 41 per cent of 237 infants, ranging in age from two to six months, studied had any natural immunity.

Their study added further proof of the "validity and desirability" of starting the immunizing of infants during first 6 months of age, the authors said.

Dr. Greenberg is chief of the Biologics Control Laboratories, Laboratory of Hygiene, Department of National Health and Welfare, Ottawa. Dr. Benoit is assistant professor of pediatrics at the University of Montreal and chief pediatrician at Creche de Misericorde, an orphanage, where the study was conducted.

—Continued on page 156a



2/20/AM

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SUMMIT, N. J.

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patient...*

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Ritalin®

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in patients with colds...sinusitis...rhinitis




unplug that stuffed-up nose

orally with

Novahistine®

The marked synergistic action of a vasoconstrictor with an antihistaminic drug provides marked nasal decongestion and promotes normal sinus drainage. Oral dosage avoids harmful misuse of topical agents...eliminates nose drop rebound. Novahistine causes no jitters or cerebral stimulation.



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Each Novahistine Tablet or teaspoonful of Elixir, provides 5.0 mg. of phenylephrine HCl and 12.5 mg. propenpyridamine maleate. Novahistine Fortis Capsules contain twice the amount of phenylephrine for those who need greater vasoconstriction.

PITMAN-MOORE COMPANY Division of Allied Laboratories, Inc., Indianapolis 6, Indiana

NEWS AND NOTES

—Continued from page 154a

Tubeless Gastric Analysis Method Outlined

For some time physicians have been looking for a simple, accurate way of determining the lack of normal acidity in the stomach without making the patient swallow a tube for this diagnostic procedure.

Now two Chicago physicians have used successfully a method that requires no tube. They said in a recent issue of *Archives of Internal Medicine*, published by the American Medical Association, that the method is simple, accurate, and easily adaptable for office use and mass screening.

The presence or absence of hydrochloric acid in the stomach is of im-

portance in diagnosing various gastric disorders, they said. The absence of the acid also is one of the signs of pernicious anemia.

The standard tube procedure is not performed with many patients for several reasons, including the reluctance of patients to swallow a tube, they said.

The doctors first gave the standard test to 84 patients. They then gave the new test, which consists of swallowing an organic dye, azure A ion-exchange compound, and water. Urine samples were taken one and two hours later. A color test of the urine indicated the presence or absence of acid.

Eighty-two of the 84 patients who had shown hydrochloric acid with the standard test were identified correctly by the new method. Twenty patients who were known to have no acid also

—Continued on page 160a

A favorite topical analgesic decongestant **NUMOTIZINE**

Prescribed for the relief of chest congestions, glandular swellings,
localized rheumatism, bruises. 4, 8, 15 and 30 ounce jars.

HOBERT LABORATORIES, INC.

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published studies show:*

Improvement is "almost immediate," with "good to excellent results" in four out of five patients, and no postherpetic neuralgia in any patient who responded favorably.

Protamide is a sterile colloidal solution prepared from animal gastric mucosa . . . denatured to eliminate protein reaction . . . completely safe and virtually painless by intramuscular injection.

Clinical data on request.

use **PROTAMIDE®** *first*
in herpes zoster and post-infection neuritis



*Combes, F. C. & Canizares,
O.: New York St. J. Med.
52:706, 1952; Marsh,
W. C.: U. S. Armed
Forces M. J. 1:1045, 1950.

*more effective than one
or two pints of tap water
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FLEET® ENEMA

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"Squeeze bottle" sized for easy one hand administration . . . distinctive rubber diaphragm controls flow, prevents leakage . . . correct length of rectal tube minimizes injury hazard . . . each unit contains, per 100 c.c., 16 gm. sodium biphosphate and 6 gm. sodium phosphate . . . an enema solution of Phospho-Soda (Fleet) . . . gentle, prompt, thorough . . . and less irritating than soap suds enemas.

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Makers of Phospho® Soda (Fleet), a modern laxative of choice.

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BUTAZOLIDIN®

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relieves pain • improves function • resolves inflammation

Employing the serum protein-polysaccharide ratio (PR) as an objective criterion of rheumatoid activity, it has again been shown that BUTAZOLIDIN "...produces more than a simple analgesic effect in rheumatoid arthritis."¹

Clinically, the potency of BUTAZOLIDIN is reflected in the finding that 57.6 per cent of patients with rheumatoid arthritis respond to the extent of "remission" or "major improvement."²

Long-term study has now shown that the failure rate with BUTAZOLIDIN in rheumatoid arthritis, and particularly in rheumatoid spondylitis, is significantly lower than with hormonal therapy.³

(1) Payne, R. W.; Shetlar, M. R.; Farr, C. N.; Hellbaum, A. A., and Ishmoel, W. K.: *J. Lab. & Clin. Med.* 45:331, 1955. (2) Bunim, J. J.; Williams, R. R., and Black, R. L.: *J. Chron. Dis.* 7:168, 1955. (3) Holbrook, W. P.: *M. Clin. North America* 29:405, 1955.

BUTAZOLIDIN® (brand of phenylbutazone). Red coated tablets of 100 mg.

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before instituting therapy.

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57155



NEWS AND NOTES

—Continued from page 156a

were identified correctly by the new method, the physicians said.

Their experience with the dye method confirms earlier findings by other physicians that it is a satisfactory way of determining stomach acidity.

Making the study were Drs. John T. Galambos, a United States Public Health Service research fellow of the National Cancer Institute, and Joseph B. Kirsner, both of the department of medicine, University of Chicago.

Blood Test Used To Diagnose Myocardial Infarction

A blood test which measures the amount of an enzyme normally abundant in the heart muscle may be used to diagnose one type of heart failure,

five Los Angeles researchers said today.

The heart condition is acute myocardial infarction, in which heart muscle cells die when a blood clot shuts off their blood supply.

The Los Angeles scientists found that the blood level of aminopherase, also known as transaminase, increases when an infarction occurs. Aminopherase is one of the enzymes or body catalysts. It makes changes in the amino acids. The breaking down of the heart muscle cells apparently releases the enzyme into the blood.

A rise in the blood level of aminopherase occurred in 13 of 14 patients with proved cases of myocardial infarction, they said in a recent issue of *Journal of the American Medical Association*.

Because the peak amount of the en-

—Continued on page 164a

because your allergic patients need a lift...

a new Rx **Plimasin**
(tripelenamine hydrochloride and methyl-phenidylacetate CIBA)
mild stimulant and antihistamine


boost their spirits...
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Each Plimasin tablet contains 25 mg. Pyribenzamine® hydrochloride (tripelenamine hydrochloride CIBA) and 5.0 mg. Ritalin® (methyl-phenidylacetate CIBA).

Dosage: One or 2 tablets as required.

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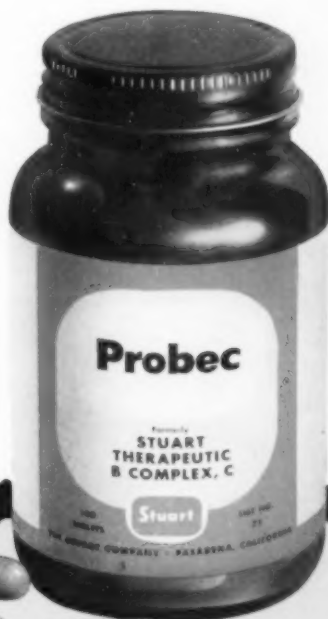
- Tablet form – no odor
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- Natural B Complex factors from liver
- 5 mg. B₆ per tablet

ONE TABLET CONTAINS:

C	150 mg.
B ₁	10 mg.
B ₂	10 mg.
B ₆	5 mg.
B ₁₂	5 mcg.
Niacinamide	150 mg.
Calcium Pantothenate	10 mg.

Also other members of the
B Complex as present in
Liver Fraction 2 N.F.

*Available in bottles of 50 and 100 tablets
at all pharmacies*



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To counteract extremes of emotion



Desbutal[®]

(DESOXYN[®] *plus* NEMBUTAL[®])

DESBUTAL gives the disturbed patient a new sense of well-being and energy, while calming his tensions and anxieties. One capsule represents 5 mg. DESOXYN Hydrochloride (Methamphetamine Hydrochloride, Abbott), and 30 mg. NEMBUTAL Sodium (Pentobarbital Sodium, Abbott). Bottles of 100 and 1000. *Abbott*



NEWS AND NOTES

—Continued from page 160a

zyme is reached about two days before the peaks of other conditions generally studied for diagnosing an infarction, the aminopherase method may be valuable in speeding diagnosis, they said. The test also may be used in cases in which the electrocardiogram fails to show heart damage.

The level of aminopherase in the blood usually begins to rise from six to 12 hours after the infarction occurs and the peak is reached in 24 to 36 hours, followed by a decline to normal by the fifth or sixth day.

Other heart disorders apparently do not produce any changes in the amount of the enzyme in the blood, they said. However, liver disease produces a rise in the enzyme level, but the peak is de-

layed for thirteen to eighteen days.

Other researchers have noted a quantitative relationship between the aminopherase level and the extent of the damage to the heart in dogs. Whether this is true of humans has yet to be proved, the authors said.

The report was made by Albert A. Kattus Jr., M. D., Robert Watanabe, A. B., Charles Semenson, A. B., William Drell, Ph. D., and Clarence Agress, M. D., from the Veterans Administration Center and the departments of medicine and physiological chemistry, University of California Medical Center, Los Angeles.

One Shot of Penicillin May Prevent Infection

A study conducted among Navy recruits has shown that one injection of

—Continued on page 168a



IF SHE NEEDS IRON—

and most prenatal patients do, give it as

CALFERBEE (Smith)

Iron as ferrous sulfate exsiccated—tribasic calcium phosphate—essential vitamins

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Iron as ferrous sulfate exsiccated—calcium lactate—dried aluminum hydroxide gel—essential vitamins

Tablets are easy to swallow, coated to prevent rapid disintegration in the stomach, therefore well tolerated. Economical, too. Choose the one which supplies calcium in the form you prefer.

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Benson's PRUNE-MALT*

BY THE MAKERS OF DIAPARENE



AVOID CATHARTIC ADDICTION

High palatability; enhances
flavor of milk, cereal, pudding,
fruit juice and ice cream.

Delicious right off the spoon.

- Physiologically stimulates peristalsis
- Induces softer stools
- A nutritious dietary supplement
(56 calories per tablespoonful)

A dietary peristaltic of prune,
fig and nondiastatic malt syrup
neutralized with potassium
carbonate.



DOSAGE: 2 tablespoonfuls at each meal
until easy elimination is restored. Then 2
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soft stools.

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widely prescribed because of these important advantages:

- 1) rapid diffusion and penetration
- 2) prompt control of infection
- 3) true broad-spectrum activity (proved effective against a wide variety of infections caused by Gram-positive and Gram-negative bacteria, rickettsiae, and certain viruses and protozoa)
- 4) negligible side effects
- 5) every gram produced in Lederle's own laboratories under rigid quality control, and offered *only* under the Lederle label
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in prolonged illness, prescribe

ACHROMYCIN SF

TETRACYCLINE with STRESS FORMULA VITAMINS

Attacks the infection, bolsters the body's natural defense. Stress vitamin formula suggested by the National Research Council in *dry-filled, sealed capsules* with ACHROMYCIN, 250 mg. Also available: ACHROMYCIN SF ORAL SUSPENSION (Cherry Flavor), 125 mg. per 5 cc. plus vitamins.



dry filled sealed capsules

(a Lederle exclusive!) for more rapid and complete absorption. No oils, no paste, tamperproof!

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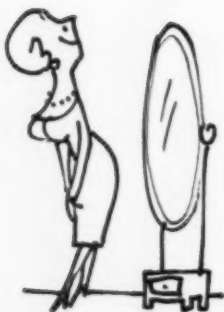


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Superior to Lotio Alba

Prescribed by dermatologists for over ten years.

Well liked by patients — free from any unpleasant hydrogen sulfide odor.

Highly activated, stabilized colloidal sulfur (5%) in a smooth, non-greasy lotion.

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Samples?
just write

DOAK PHARMACAL CO., Inc.
295 Madison Avenue
New York City, N. Y.

168a

NEWS AND NOTES

—Continued from page 164a

penicillin may prevent the development of streptococci infections.

A single injection of benzathine penicillin G was given to each of 2,913 recruits at the Bainbridge, Md., training center. These men had been found to have beta-hemolytic streptococci in their throats.

In 624 of these men the streptococci were classified as group A, which cause sore throats and rheumatic fever. The one injection of penicillin eradicated the bacteria in the throats of 597 of these men and prevented reinfection for at least one month, the report in a recent issue of the *Journal of the American Medical Association* said.

Of those 597 men, 576 had no known recurrence of the bacteria for the remainder of their recruit training.

The authors said the results indicated that benzathine penicillin G may warrant further investigation as "a safe, effective, long-term single-injection" preventive agent in the control of streptococci infections, especially in large groups.

Unfavorable reactions, which generally consisted of rash and hives, occurred in only 25 of the 2,913 men. One case was considered serious. There was no case of rheumatic fever in any recruit who had received an injection of the antibiotic.

Making the report were Lt. Thomas J. Brooks, Jr., (MC), U.S.N.R., now professor and chairman of the department of preventive medicine at the University of Mississippi School of Medicine, and Capt. Tilden L. Moe (MC),

—Continued on page 170a

MEDICAL TIMES

to help
your
patients
past 40
correct...



biliary dyspepsia & constipation

Rehfuss¹ has stated that after 40, constipation is "the greatest single medical problem" and Shaftel² reports on the exceptional clinical results of Caroid® and Bile Salts in chronic constipation typical of this age bracket.

These cases do not respond to laxatives alone because associated complaints of flatulence and indigestion point to biliary dysfunction and digestive impairment as factors *coexisting* with constipation.

Caroid and Bile Salts Tablets are ideally suited for broad coverage in these cases. Through their 3-way action, they:

- INCREASE BILE FLOW
- IMPROVE DIGESTION
- PROVIDE GENTLE LAXATION

Tablets of Caroid and Bile Salts with Phenolphthalein have been clinically established and proved over the years. Try them in your next case of biliary dyspepsia and constipation.

Available — bottles of 20, 50, 100. For professional samples address:

American Ferment Company, Inc., 1450 Broadway, New York 18, N. Y.

CAROID AND BILE SALTS *tablets*

1. Rehfuss, M. E.: Indigestion, Philadelphia, W. B. Saunders Co., 1943, p. 322.
2. Shaftel, H. E.: J. Am. Geriatrics Soc. 1:549 (Aug.) 1953.

NEWS AND NOTES

—Continued from page 168a

U.S.N., now commanding officer of the U.S. Naval Hospital, Guantanamo Bay, Cuba.

"Human Relations" Program Suggested For Industry

An industrial medical director has suggested, after a study of 28,000 workers, that the number of absences because of illness can be reduced by a "grass roots" approach to the problem.

Dr. Leo Wade, of the Esso Standard Oil Company, New York, proposed a "human relations" program in industries "to make sure that each worker is properly assigned so that he can do a 100 per cent job without harm to himself or his associates." The program would be run by the medical director,

personnel officer, and department supervisors.

A certain amount of sickness absenteeism is inevitable, but excessive absenteeism may be a sign that a worker is not properly assigned or is incapable of adjustment in industry.

Dr. Wade found in his study, reported in a recent issue of *Archives of Industrial Health*:

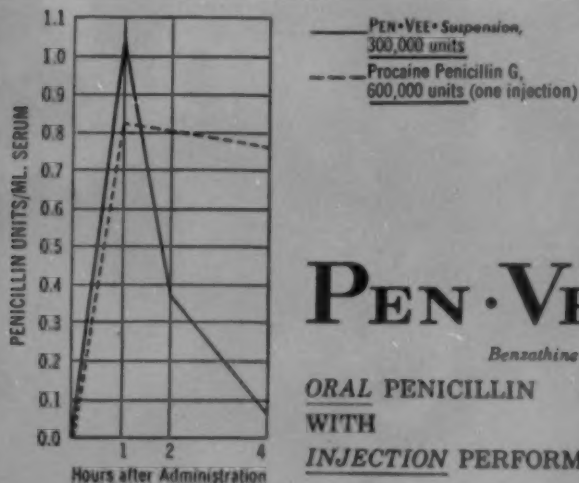
—Women employees were absent more than twice as often as men—2,772.3 absences per 1,000 women per year compared with 1,054.3 absences per 1,000 men per year.

—The average number of days lost per absence among women was less than half that for men—3.6 and 8.3 days.

—The average number of absences per year tended to decrease slightly as employees grew older; however, the

—Concluded on page 172s

Now! Palatable Oral Suspension Gives Higher, Faster Blood Levels than Twice the Dose of Injected Procaine Penicillin



This ready-mixed, stable, and pleasantly flavored suspension is supplied as follows: PEN·VEE·Suspension, 300,000 units per 5-cc. teaspoonful, bottles of 2 fl. oz. Also available: PEN·VEE·Oral Tablets, 200,000 units, scored, bottles of 36; 500,000 units, scored, bottles of 12.

PEN·VEE* Suspension

Benzathine Penicillin V Oral Suspension

ORAL PENICILLIN
WITH
INJECTION PERFORMANCE



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KNOX

Protein Previews



New Study Shows Gelatine Restores Brittle Fingernails to Normal

Directions for making the Knox Gelatine drink in every package



Brittle, fragile or laminating fingernails are the bane of many a woman's existence. Now, you can promise these patients substantial relief in a large percentage of cases.

In a recent study¹ that confirmed previous work² Knox Gelatine was used to treat 36 women with fragile, brittle, laminating fingernails. Except for three patients who discontinued the therapy, three diabetics, and two women who had congenital deformities, the splitting ceased and all other patients were able to manicure their nails to a full point by the time the study ended.

Optimal dosage proved to be one envelope (7 grams) of Knox Gelatine ad-

ministered daily for three months. Improvement, however, was noted after the first month.

1. Rosenberg, S. and Oster, K. A., "Gelatine in the Treatment of Brittle Nails," *Conn. State Med. J.* **19**:171-179, March 1955.

2. Tyson, T. L., *J. Invest. Dermat.* **14**:323, May 1950.

Chas. B. Knox Gelatine Company, Inc.
Professional Service Dept. Dept. MT-2
Johnstown, N. Y.

Please send me a reprint of the article by
Rosenberg and Oster with illustrated color
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New Clinical Data in Eczema Cases

Drying, healing and anti-pruritic for persistent, itching eczema—speedy, white, non-staining and non-burning SUPERTAH (Nason's) is widely used by the pro-jar (1-oz.) on request with re-print (Medical Times) on clinifession here and abroad. Sample cal studies of 18 dermatoses.

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NEWS AND NOTES

—Concluded from page 162a

average duration of absences increased "strikingly" for men.

—One-day absences made up a smaller portion of the total absences with each successive decade, while long term absences increased. This may result in part from a change in the disease pattern with increasing age.

—Respiratory disease accounted for almost half of the total absences, while gastrointestinal disease was responsible for slightly more than one-fourth. Cardiovascular disease was responsible for less than 2 per cent of the total.

—With advancing age, the frequent mild upper respiratory or gastrointestinal upsets were replaced by infrequent serious life-threatening diseases.

—The major part of the total number of absences was due to a relatively small number of employees—often the same employees year after year.

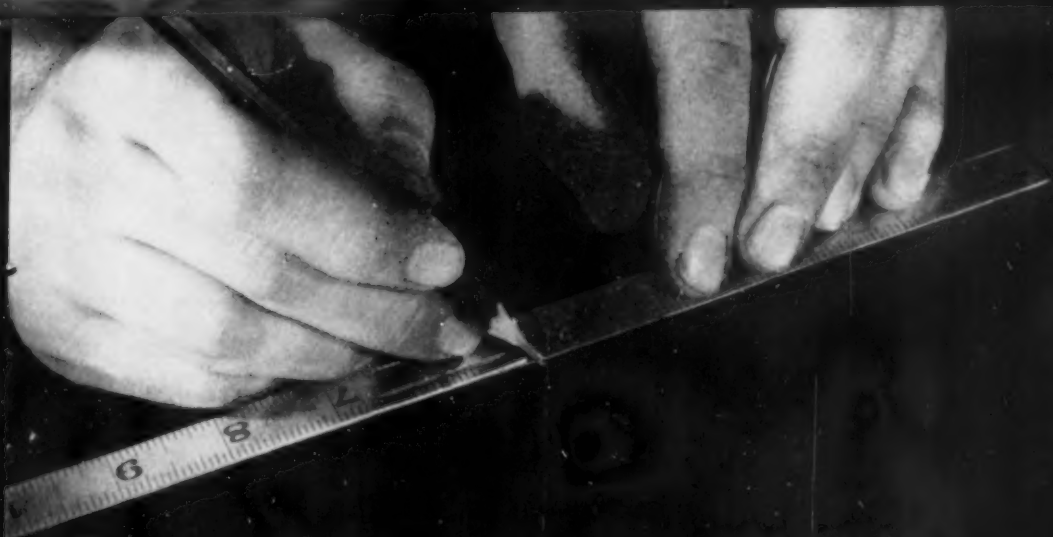
—The weather, often blamed for increased absenteeism, apparently played no part in it. The only correlation found was that there were fewer absences on higher temperature days.

—Shift work did not increase absenteeism.

—Morale factors, such as a supervisor's personality, type of work, and home situation, were of "extreme importance" in influencing the rate of absences.

—One and two-day absences frequently were related to weekends or holidays. A study of one refinery in 1948 showed that 54.8 per cent of such absences immediately preceded or followed otherwise legitimate time off.

MEDICAL TIMES



Re-activate the arthritic

Sterane

MOST POTENT
ANTI-RHEUMATIC *

Even where hydrocortisone, cortisone, and other agents had failed, prednisolone (STERANE) restored articular mobility and functional capacity to normal in rheumatoid arthritis.¹

Four times more effective than hydrocortisone, and, on the basis of preliminary findings,^{2,3} superior in potency even to prednisone (cortisone analog), STERANE is also relatively free of such hormonal side effects as edema, hypertension, or hypopotassemia.

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References: 1. Bunim, J. J., et al.: J.A.M.A. 157:311, 1955. 2. Forsham, P. H., et al.: Paper presented at First Internat. Conf. on Prednisone and Prednisolone, New York, May 31-June 1, 1955. 3. Perlman, P. L., and Toksdorf, S.: Scientific Exhibit presented at A.M.A. Annual Meet., Atlantic City, June 6-11, 1955.

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MEDICAL TIMES

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With continued applications of RIASOL, all visible vestiges of psoriasis finally vanish. Such remissions of the disease may last for many months or even years.

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*Ormsby, O. S. and Montgomery, H., Diseases of the Skin, 8th ed., 1954.



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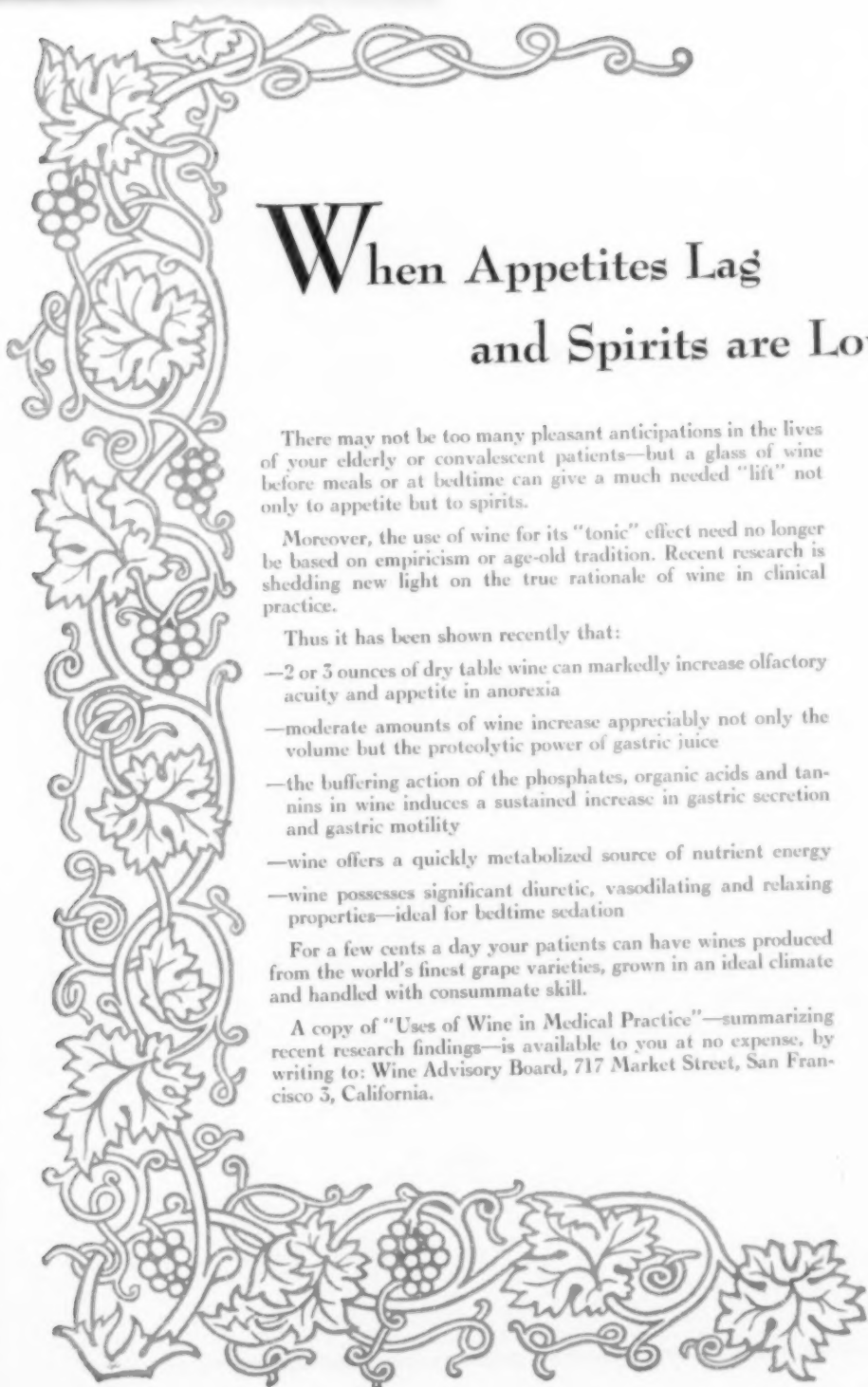
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Supplied: Gallons, Pints, 8-oz. Bottles.

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MEDICAL TIMES, MARCH, 1956

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SQUIBB WHOLE ROOT RAUWOLFIA SERPENTINA

in anxiety and tension states . . .

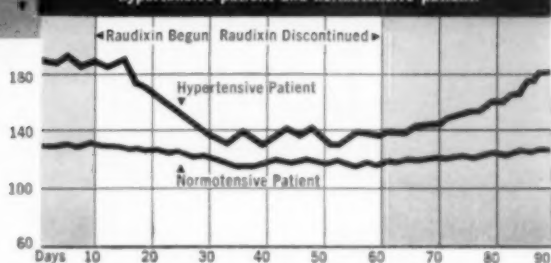
*stable ataractic (tranquilizing) effect
without excessive sedation*

in hypertension . . .

*stable hypotensive effect without rapid peaks and
declines in blood pressure*

Systolic
Pressure, mm.

**Comparative effect of Raudixin on the blood pressure of
hypertensive patient and normotensive patient.**



DOSAGE: 100 mg. b.i.d. initially; may be adjusted within a range of 50 mg. to 500 mg. daily. Most patients can be adequately maintained on 100 mg. to 200 mg. daily.

SUPPLY: 50 mg. and 100 mg. tablets, bottles of 100, 1000 and 5000.

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High concentration Topical Salicylate Therapy

for safer, more effective
relief of rheumatic pain



High concentration topical salicylate-menthol therapy (BAUME BENGUÉ) offers safe, penetrating relief of painful joints and muscles caused by overexertion.

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ANALGÉSIQUE

■ *Topical salicylate therapy is being rediscovered as perhaps the safest, most effective remedy for aching joints and muscles.*

Increased percutaneous absorption of salicylate, with enhanced blood flow through the affected tissue is provided by BAUME BENGUÉ, offering up to 2.5 times more methyl salicylate (19.7%) and menthol (14.4%) than other topical salicylate preparations. In arthritis, myositis, bursitis and arthralgia, BAUME BENGUÉ induces deep, active hyperemia and local analgesia.

Lange and Weiner suggest the term "hyperkinemics" to describe preparations such as BAUME BENGUÉ which produce blood flow through a tissue area. They point out that hyperkinemic effect, as measured by thermoneedles, may extend to a depth of 2.5 cm. below the surface of the skin. (*J. Invest. Dermat.* 12:263, May, 1949.)

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Menthol-induced hyperemia plus high local concentration of salicylate has been rediscovered as one of the most promptly effective remedies for rheumatoid discomfort due to exposure.





*Verse by
RICHARD ARMOUR
Illustrations by
LEO HERSHFIELD

IGNORANCE ISN'T BLISS*

There is an awful, quite unlawful,
Violent and dread ache
That should have fame and Latin name
And yet is called "a headache."

The victim thinks his head's in kinks,
Or, from the inner clamor,
Some hidden sprite with all his might
Is banging with a hammer.

He seems to feel that rods of steel
Are thrusting through his cranium.
In state so vile, he couldn't smile
To hear he'd struck uranium.

Poor soul is he who hopelessly
Is sick as hell with migraine
(And pity, too, this person who
Must not have heard of Wigraine.)



WIGRAINE®

A fast-acting, complete treatment for the migraine attack, Wigraine tablets each contain 1.0 mg. ergotamine tartrate and 100.0 mg. caffeine to abort head pain; 0.1 mg. belladonna alkaloids to alleviate nausea and vomiting; and 130.0 mg. acetophenetidin to relieve residual occipital muscle pain. The tablets disintegrate in seconds, and are available foil-stripped in boxes of 20.

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broader attack to overcome minor throat irritations

MAJOR ADVANTAGES: Combines 3 antibiotics to fight both gram-positive and gram-negative bacteria. Benzocaine included for soothing effect. Little danger of sensitization.



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'TETRAZETS' offer you the ideal topical treatment of minor irritations of the oral cavity.

In deep-seated infections, such as Vincent's infection, tonsillitis and streptococcus sore throat, 'TETRAZETS' may be used as an adjuvant to parenteral antibiotics.

Before and after tonsillectomies, 'TETRAZETS' help combat secondary invaders.

Supplied: In vials of 12. Each 'TETRAZETS' troche contains 50 units of zinc bacitracin, 1 mg. tyrothricin, 5 mg. neomycin sulfate with 5 mg. benzocaine.



Philadelphia 1, Pa.
DIVISION OF MERCK & CO., INC.

6. Of the various types of radiation listed below, the one which has the greatest penetrating power is radiation with: (A) gamma rays; (B) alpha rays; (C) ultraviolet rays; (D) beta rays.

7. Of the following combinations of chemical findings, the one most usually found in tetany due to hypoparathyroidism is: (A) low serum calcium, low serum inorganic phosphate, normal serum alkaline phosphatase. (B) low serum calcium, high serum inorganic phosphate, normal serum alkaline phosphatase; (C) low serum calcium, high serum inorganic phosphate, high serum alkaline phosphatase; (D) low serum calcium, high serum inorganic phosphate, low serum alkaline phosphatase.

8. The radioactive iodine tracer test of thyroid function should not be used in the presence of: (A) leukemia; (B) heart failure; (C) uremia; (D) pregnancy.

9. The one of the following fractures for which open reduction is rarely indicated is: (A) fracture of the neck of the femur; (B) supracondylar fracture of the humerus; (C) fracture of the olecranon; (D) fracture of the patella.

10. The proper treatment of a comminuted fracture of the head of the radius with displacement is: (A) immobilization in plaster; (B) sling with early motion; (C) excision of the fragments of the head of the radius; (D) immediate aspiration of blood from the elbow joint.

11. Kayser-Fleischer rings are usually associated with: (A) erythema circinatum; (B) quartan malaria; (C) hepatolenticular degeneration; (D) Gaucher's disease.

12. A man, aged 50, complains of passing small amounts of fresh blood per anus after each bowel movement. There are no other complaints, but the feces frequently have streaks of fresh blood on the surface. Of the following, the type of additional examination which is most likely to establish the diagnosis is: (A) barium enema with x-ray examination; (B) proctosigmoidoscopic examination; (C) examination of stool for ova and parasites; (D) Papanicolaou stain and study of exfoliated cells from freshly passed feces.

13. Steatorrhea is an uncommon finding in: (A) non-tropical sprue; (B) pellagra; (C) cystic fibrosis of the pancreas; (D) celiac disease.

14. Trichobezoar usually implies: (A) granuloma of rectum; (B) intestinal parasitic infestation; (C) fecalith in appendix; (D) hair ball in stomach.

15. The spinal fluid sugar is most likely to be reduced in: (A) lymphocytic choriomeningitis; (B) St. Louis encephalitis; (C) general paresis; (D) tuberculous meningitis.

16. Of the following diseases, the one in which leukopenia is most characteristic is: (A) kala-azar; (B) leptospirosis; (C) actinomycosis; (D) lobar pneumonia.



ACTH
q 2 days
rather than q 12 h

*One injection
is effective for
24 to 72 hours
or more*

By adsorption of ACTH on zinc hydroxide, Cortrophin-Zinc permits extension of ACTH activity for a period of 1 to 3 days. This minimizes the therapeutic "ups and downs" which may occur during ACTH-in-gel therapy and provides smooth corticotropin action for a truly extended period.

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DEPROTEINATED PANCREATIC EXTRACT

promptly relieves smooth muscle spasm

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You can relieve spasm in 3 minutes with DEPROPANEX¹

DEPROPANEX, by relieving smooth muscle spasm, is valuable in ureteral, renal and biliary colic and in various urologic instrumental procedures.

Intermittent claudication is markedly improved with DEPROPANEX.^{2,3} DEPROPANEX also helps control post-operative paralytic ileus.

That DEPROPANEX has "beneficial effect...throughout the post-operative period has been convincingly demon-

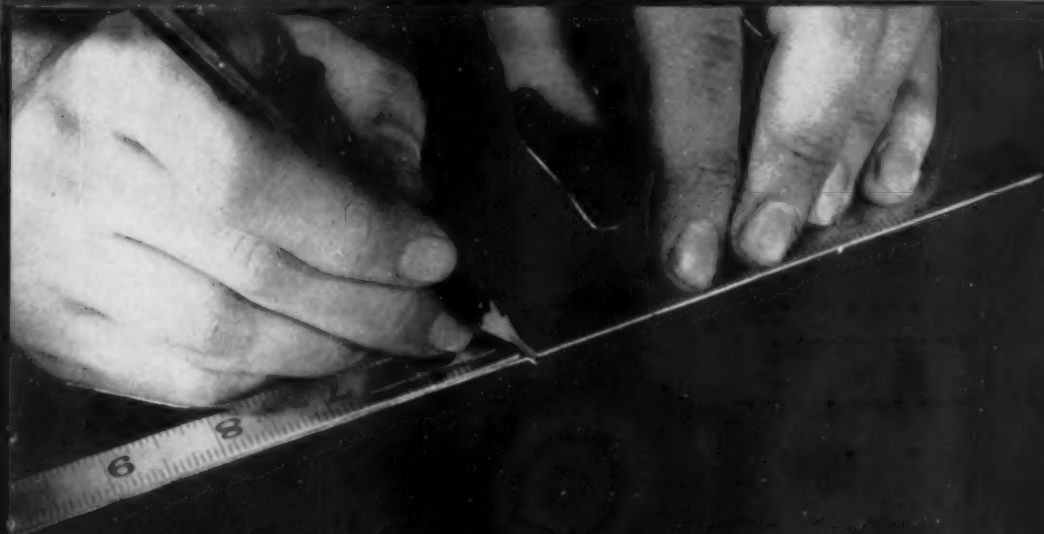
strated."⁴ There is less nausea, little need for intravenous fluids, for nasal suction or enemas.⁴

Dosage: 2 to 5 cc. Supplied in 10 and 30 cc. rubber-capped vials.



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References: 1. South. M. J. 31:233 (March) 1938. 2. Bull. New York Acad. Med. 19:478 (July) 1943. 3. Am. Heart J. 18:425 (Oct.) 1939. 4. Minnesota Med. 33:1102 (Nov.) 1950.



Re-activate the arthritic

Sterane

MOST POTENT
ANTI-RHEUMATIC*

Even where hydrocortisone, cortisone, and other agents had failed, prednisolone (STERANE) restored articular mobility and functional capacity to normal in rheumatoid arthritis.¹

Four times more effective than hydrocortisone, and, on the basis of preliminary findings,^{2,3} superior in potency even to prednisone (cortisone analog), STERANE is also relatively free of such hormonal side effects as edema, hypertension, or hypopotassemia.

Supplied: White, 5 mg. oral tablets, in bottles of 20 and 100. Pink, 1 mg. oral tablets, in bottles of 100. Both are deep-scored and in the distinctive "easy-to-break" size and Pfizer oval shape.

References: 1. Bunim, J. J., et al.: J.A.M.A. 157:311, 1955. 2. Forsham, P. H., et al.: Paper presented at First Internat. Conf. on Prednisone and Prednisolone, New York, May 31-June 1, 1955. 3. Perlman, P. L., and Tolksdorf, S.: Scientific Exhibit presented at A.M.A. Annual Meet., Atlantic City, June 6-11, 1955.

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

*brand of prednisolone

MODERN THERAPEUTICS

—Continued from page 144a

rose in six instances, fell in 13 instances, and was unchanged in one. Patients with peptic ulcer did not appear to react differently from those with other digestive disturbances. Also, the average volume, free acidity and output of hydrochloric acid of residual specimens and of the four 15-minute basal specimens during reserpine administration showed no significant change from control values. Side-effects were minimal. It is possible that large doses of reserpine administered over a short time might increase gastric acidity. It is also possible that the tranquilizing effect of well-tolerated

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In evaluating the status of streptomycin and dihydrostreptomycin, they are considered together because they share limitations, i.e., bacterial resistance and side-effects. Streptomycin may be administered orally, intramuscularly or intrathecally. The oral dosage is 0.5 to 1.0 gram twice or three times daily, but the usefulness of the drug by this route is limited since intestinal organisms acquire resistance readily. For intramuscular injections, streptomycin

—Continued on page 150a

PUBL. AUG. 1954

2ND EDITION

LEGAL MEDICINE PATHOLOGY AND TOXICOLOGY

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MILTON HELPERN, M.D., and CHAS. J. UMBERGER, Ph.D.

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